



Central Puget Sound Regional Fare Coordination System

Portable Fare Transaction Processor Operations Manual - KCM DART

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1 Introduction

The Portable Fare Transaction processor (PFTP) for the King County Metro (KCM) Dial-a-Ride Transit (DART) is a portable device that can be used for a variety of purposes in the Automated Fare Collection (AFC) system of the Central Puget Sound Regional Fare Coordination System (RFCS).

The PFTP provides the following functions:

- Operator login and logout procedures
- Operator shift and trip functionality
- The following optional business functions:
 - Fare Payment
 - Card Inquiry
- Configuration data (CD) and usage data (UD) transfer

In order to travel on the transit services, passengers present a smart card to the PFTP, which has a card reader located at the top of the device. These transactions are stored on the device and later passed from the device to a central computer known as the Data Acquisition Computer (DAC), via a modem. This information is referred to as usage data (UD) and includes payments, schedules, and shift details that are recorded to the DAC. From the DAC, the information is sent to the Back Office Computer (BOC) and ultimately to the Clearinghouse.

The DAC also sends information to the PFTP via modem connection. This information is referred to as configuration data (CD), and it includes such information as timetables, fares, and device settings.

1.1 Purpose

This document provides detailed information for operators in the use of the PFTP handheld device.

1.2 Scope

The scope of this document is limited to instructions relating to the navigation of relevant operator screens on the PFTP and the collecting of fares.

1.3 Training Mode

Both operator cards and fare cards can be ordered with the Training Mode bit enabled. Cards set as Training Mode cards can only be used for Training Mode.

When the PFTP is in Training Mode, a "(T)" indicator appears to the left of the Battery icon in the upper right corner, as shown in Figure 1.

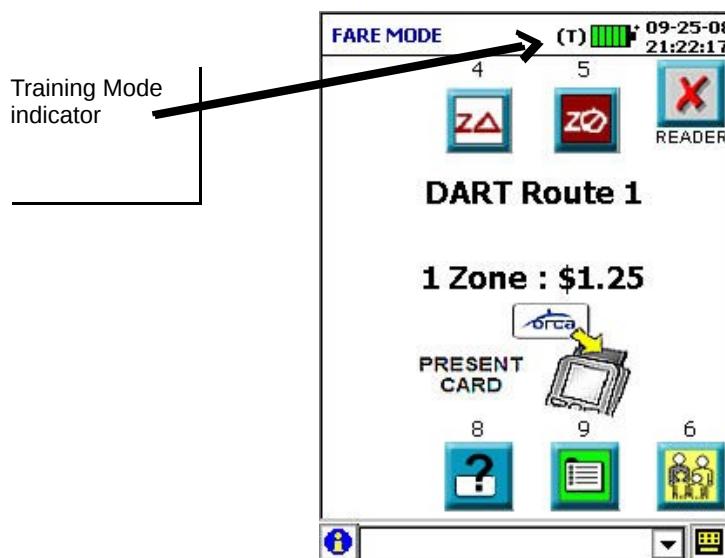


Figure 1: PFTP Training Mode indicator – Fare Mode example

The PFTP operation in Training Mode is identical to normal revenue operation except:

1. The PFTP remains in Training Mode until the operator logs out.
2. All UD records have the environment set to Training Mode.
3. No Audit Registers are updated.

Note: Training Mode transactions follow the same data path as normal transactions (to the DAC, BOC, and Clearinghouse). This enables end-to-end testing (card to Clearinghouse) to be conducted in the revenue system. Note that although training transactions are cleared, they are not included in financial settlement.

For normal operations, the PFTP will reject Training Mode Fare Cards. In Training Mode, the PFTP will reject normal fare cards (i.e., fare cards that do NOT have the Training bit enabled).

2 Device Overview

The PFTP is a [Hewlett Packard iPAQpsion](#) handheld device. Figure 2 shows the features of the device.



Figure 2: Portable Fare Transaction Processor (PFTP)

The PFTP device provides operators with the ability to:

- Accept fares and passes
- Inspect passenger cards
- Provide card details to passengers

The PFTP device has a display screen that shows the details of transactions. There are two ways information can be entered:

- **The Display Screen** — Display screen icons and buttons may be selected using the stylus that is provided with the PFTP. In addition, there is a keyboard icon that displays a QWERTY keyboard on the display screen. The keyboard can be used to enter text by tapping with the stylus.
- **The Keypad** — Icons and buttons on the display screen can be selected by pressing the corresponding hotkeys on the keypad. The Directional Toggle Button can be used to change items highlighted for use on the display screen.

When using the stylus and the display screen keyboard:

- Do not rest your fingers or hand on the display screen while using the stylus to select keys.
- Do not use anything but the stylus. A pen, pencil, or other pointy object can damage the display screen.
- Press and tap firmly when using the stylus. The display screen is designed for use with the stylus.

The keypad of the PFTP is similar to a cell phone keypad. The keypad has:

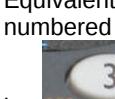
- Alphanumeric keys to enter information, or that can be used as hotkeys to execute functions shown on the display screen
- Directional toggle button that is used to change the selection of the highlighted item on the display screen

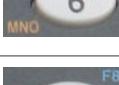
2.1 Screen Icons and Buttons

Most icons shown on the display screen have a corresponding hotkey on the PFTP keypad. Table 1 displays icons and their equivalent hotkey buttons. Some icons and hotkey buttons have functions that change between screens.

Table 1: Display Screen Icons and Keypad Button Reference Chart

Display Screen icon or action	Description	Equivalent Keypad hotkey	Used
Tap on screen	Backlight on		Used when the display screen goes to 'sleep'
	Back to previous screen		LOG IN screen
	CHECK icon		INFORMATION screen
	SELECT ROLE icon		LOG IN screen
	OPTIONS icon		FARE MODE screen
	CARD READER ON icon	No equivalent	Shows that the card reader has been activated
	CARD READER OFF icon		Shows the card reader is deactivated. Tapping the display screen button or pressing the hotkey activates the card reader.
	INFORMATION icon	No equivalent	LOG IN screen
	ESCAPE icon		On some screens, pressing the Enter key will also activate the ESC function
	TAB on screen keyboard		Moves cursor to next text entry field
Clicking in next text entry field using the hand-held stylus	TAB		Moves cursor to next text entry field

Display Screen icon or action	Description	Equivalent Keypad hotkey	Used
	KEYBOARD icon	No equivalent	Displays/hides the display screen keyboard
	FARE PROCESSOR Role		SELECT ROLE screen
	SUPERVISOR Role		SELECT ROLE screen
	MAINTENANCE Role		SELECT ROLE screen
	INQUIRY icon		START TRIP screen FARE MODE screen
	OPTIONS icon		START TRIP screen FARE MODE screen
	SCROLL DOWN icon		START TRIP screen
	SCROLL DOWN icon		Moves cursor to next text entry field
	VEHICLE OVERRIDE drop-down icon		FARE MODE screen
	Drop-down menu icon		CARD INQUIRY screen
	Field Inquiry icon	Equivalent numbered button i.e. 	CARD INQUIRY screen
Select from drop-down menu using stylus	Select from drop-down menu		CARD INQUIRY screen
	LOCK icon		TRIP OPTIONS screen (SHIFT OPTIONS screen)
	END TRIP icon		TRIP OPTIONS screen
	AUDIO icon		TRIP OPTIONS screen (SHIFT OPTIONS screen)

Display Screen icon or action	Description	Equivalent Keypad hotkey	Used
	LIST TRIPS icon		SUPERVISOR screen
	TRIP TOTALS icon		SUPERVISOR screen
	SHIFT TOTALS icon		SUPERVISOR screen
	CALIBRATE icon		MAINTENANCE screen
	CONNECT icon		MAINTENANCE screen
	Battery icon		MAINTENANCE screen
	CD List icon		MAINTENANCE screen
	AR List icon		MAINTENANCE screen
	CONFIGURE icon		MAINTENANCE screen
	AUDIO icon		MAINTENANCE screen
	LOCK icon		SHIFT OPTIONS screen (TRIP OPTIONS screen)
	END SHIFT icon		SHIFT OPTIONS screen
	AUDIO icon		SHIFT OPTIONS screen (TRIP OPTIONS screen)
	CONTINUE icon		FARE MODE transaction screen
	CHANGE ZONE icon	No equivalent	FARE MODE screen

Display Screen icon or action	Description	Equivalent Keypad hotkey	Used
	ZONE OVERRIDE icon	No equivalent	FARE MODE screen
	ZONE OVERRIDE icon	No equivalent	SELECT FARE screen
	2 ZONES icon	No equivalent	SELECT FARE screen
	Special	No equivalent	SELECT FARE screen

2.2 Screen Layout

Figure 3 shows the various ways information appears on the display screen.

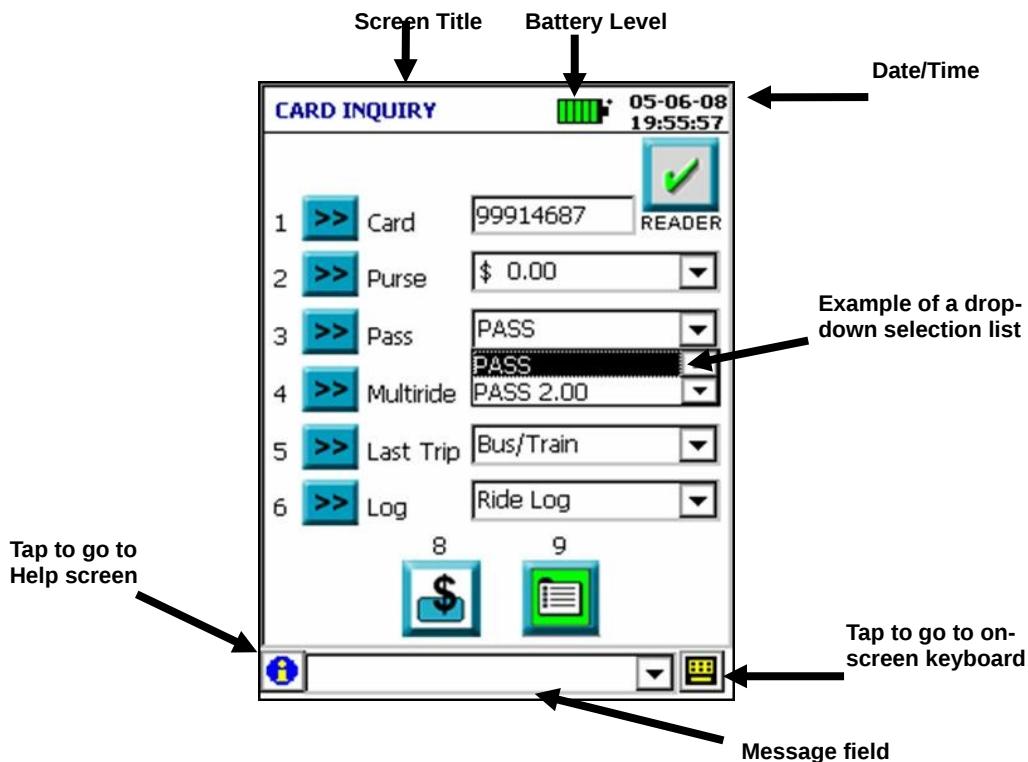


Figure 3: Example Display Screen

The display includes:

- **Indicators** – The top bar of the display screen shows information about the screen title, the battery status, the date, and the time.
- **Display Screen Text information** – During different actions, information will be provided to assist the user.

- **Display Screen Buttons** – Buttons have a beveled edge and can be tapped with the stylus to carry out specific actions.
- **Icons** – A small picture or symbol used to represent an item or to go to another screen. Icons will appear within the display window to operate in much the same way as display screen buttons.
- **Drop-down Lists** – A fixed list of options or functionalities from which the user can choose. The drop-down menu can be fully accessed by clicking on the down arrow button to the right of a selection box: Sometimes an option in such a list activates a new menu (for example, the sorting option). Select the required item by tapping it.

2.3

The Keypad and Button Relationship

Figure 4 shows an example of how icons and buttons on the display screen correspond to hotkeys located on the keypad.

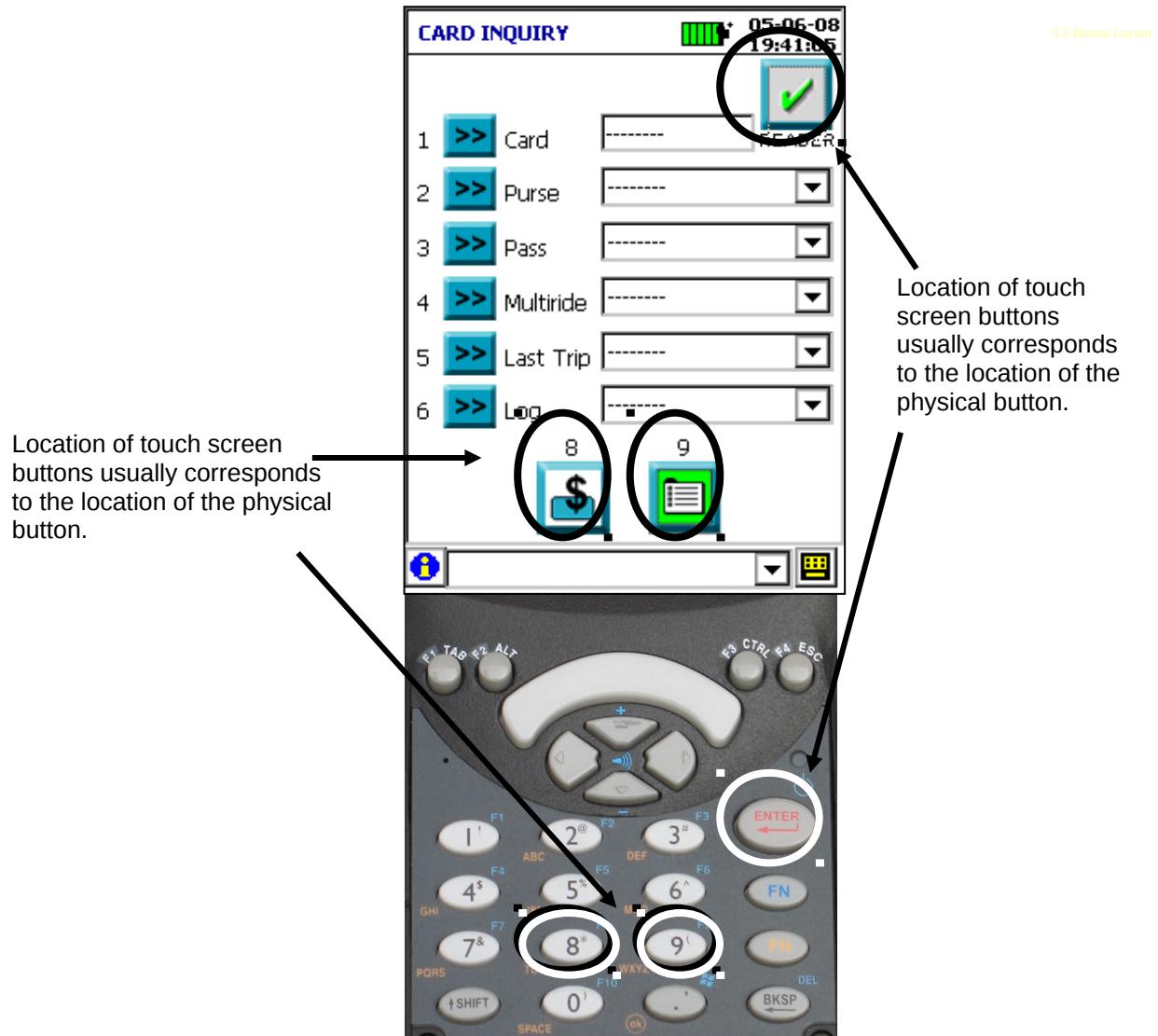


Figure 4: Keypad and Button Relationship

2.4 Entering Text

To enter text into the PFTP, you can use keys on the physical keypad, or you can use the stylus to tap the keys on the display screen keyboard. In order for some characters to be used on the physical keypad, the **Orange FN** key or the **SHIFT** key must be pressed to access that corresponding set of characters.

The bottom right corner of the screen displays a keyboard icon, which can be tapped to display or hide the on-screen keyboard.



Figure 5: Screen Keyboard Icon

The display screen keyboard is based on the characters available on a standard QWERTY keyboard. Due to limitations on screen space, the keyboard is presented in several views, with each view displaying a subset of the available characters.

The default view shows lowercase characters, digits, and punctuation. The large button on the bottom row inserts a space character.

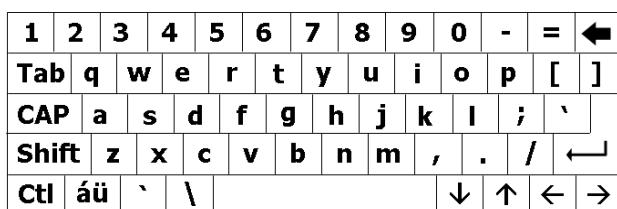


Figure 6: Keyboard display – Lowercase

Tapping the **CAP** key displays the uppercase characters and a second set of punctuation characters. Tapping the **CAP** key again reverts to the default view.

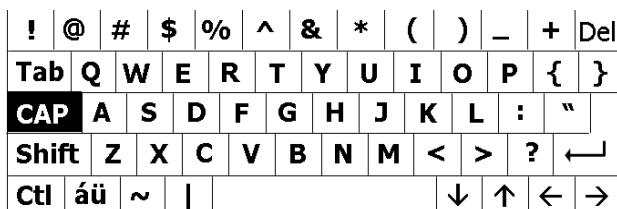


Figure 7: Keyboard display – Uppercase

Tapping the **Shift** key when the **CAP** view is active temporarily converts the keyboard to have one character be uppercase followed by lowercase.

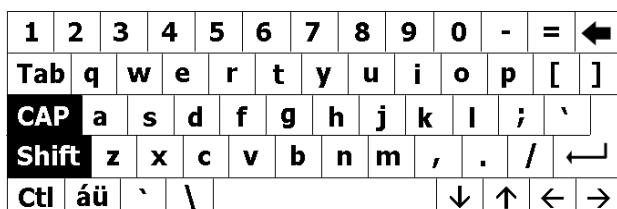


Figure 8: Keyboard display – One Upper/Rest Lowercase

Tapping the **áü** key displays a set of lowercase special characters.



Figure 9: Keyboard display – Special Characters Lowercase

Tapping the **CAP** key when the **áü** view is active displays the corresponding set of uppercase characters, and tapping the **Shift** key when the **áü** view is active temporarily converts the keyboard to have one character be uppercase followed by lowercase.

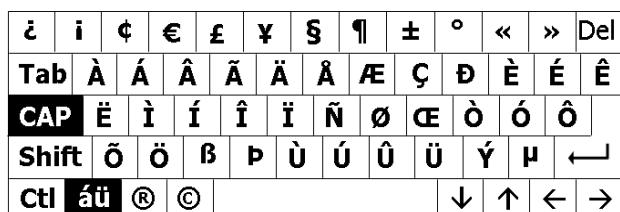


Figure 10: Keyboard display – Special Characters Uppercase

2.5 Correcting Text

If you need to correct text:

- On the lowercase keyboard, use the **Backspace** arrow to delete characters to the left of the cursor.
- On the uppercase keyboard, use the **Del** key to delete characters to the right of the cursor.
- On the keypad, use the **BKSP** button to delete characters to the left of the cursor
- On the keypad, use the **Blue FN** button before the **BKSP** button to delete characters to the right of the cursor.

2.6 Moving the Cursor Between Fields

Tap the **Tab** key on the keyboard to move the cursor from one field to the next or use a **Directional Arrow** key (see Figure 11).

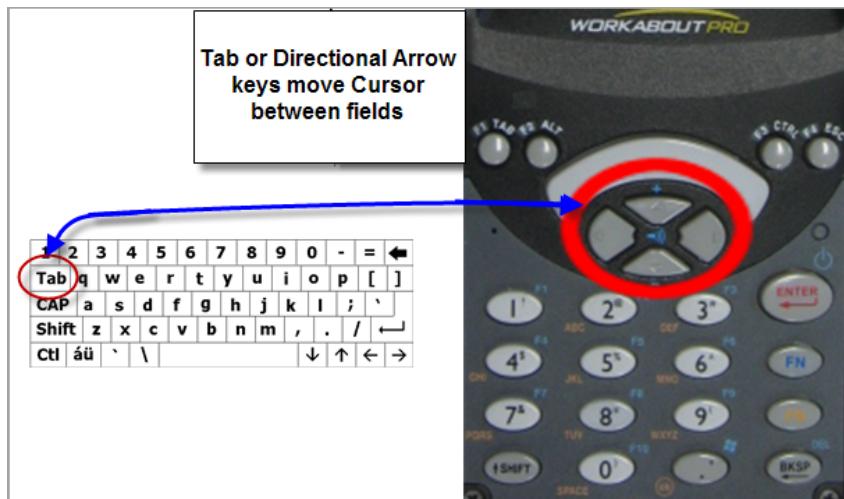


Figure 11: Directional Keys

You can cycle through the fields in the reverse direction by tapping the **Shift** key before each tap of the **Tab** key or using the opposite **Directional Arrow** key.

3 Operation

This section describes the operation of the PFTP. The topics discussed are:

- Startup
- View Information screen
- Start Shift
- Select Role
- Start Trip
- Fare Mode
- Transactions
- Inquiry
- End Trip
- End Shift/End Day
- Lock/Unlock Device

3.1 Startup

When the PFTP device first is powered on, the device goes through the process of sending and receiving CD and UD to and from the DAC. If the PFTP is not correctly configured, the sending and receiving of data will need to take place before PFTP can be used. User action is indicated by the use of numbers.

To start up the PFTP device:

1. Press the **Power** hotkey.

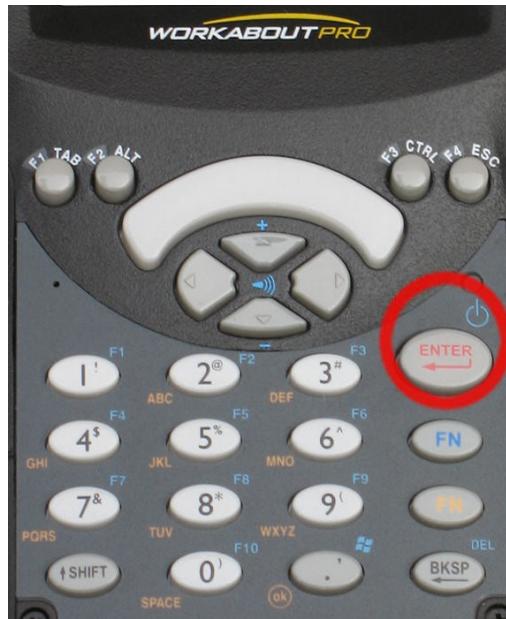


Figure 12: Power hotkey and Power symbol

The **Initializing** screen is displayed while the device starts up.

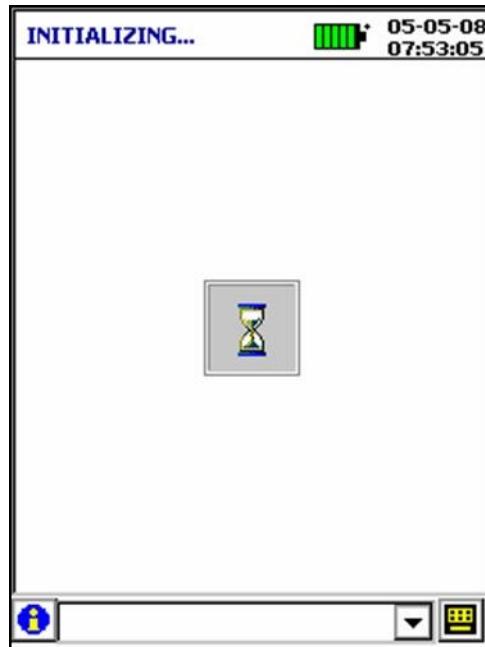


Figure 13: Initializing Screen

The **Connecting to Host** screen is displayed while the device attempts to connect to the DAC.



Figure 14: Connecting to Host screen

The **Host Connection Success** screen is displayed when connection to the DAC is established.



Figure 15: Host Connection Success screen

The latest CD will then automatically download from the DAC to the PFTP, and the latest UD will upload from the PFTP to the DAC.

The **Host Connection Fail** screen is displayed when the attempted connection to the DAC fails. This may happen because the PFTP is out of signal range or because of a problem with the DAC itself. The PFTP will continue the startup sequence to display the user **Log In** screen. The PFTP will continually retry the connection to the DAC, so that data transfer can take place.



Figure 16: Host Connection Failed screen

The **Data Transfer** screen indicates the transfer progress of data sent and received by the DAC and the PFTP.

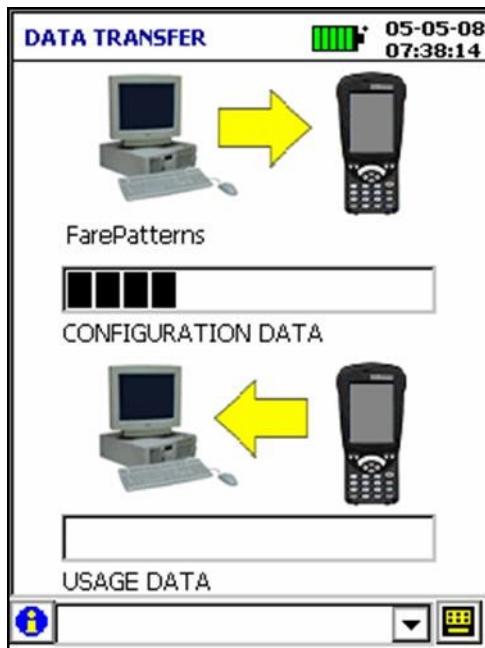


Figure 17: Data Transfer screen

In the event of an RFCS upgrade, the new version of the software application is downloaded with the following message displayed.

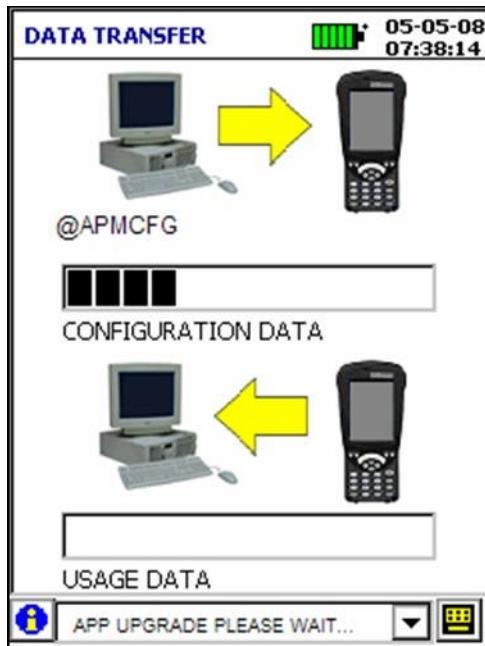


Figure 18: Application Upgrade screen

When the data transfer is complete, the **Log In** screen is displayed.

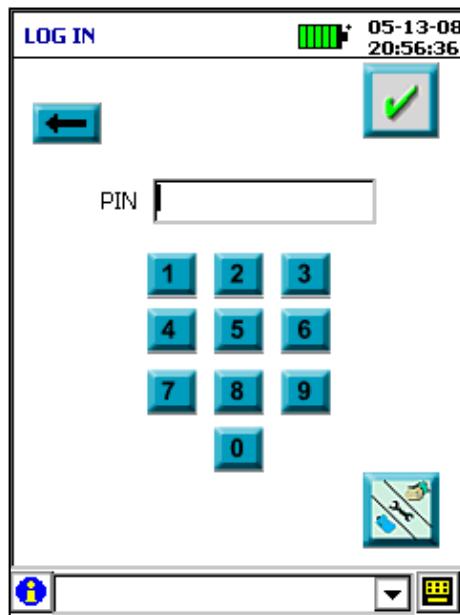


Figure 19: Log In screen

If the device is already powered up, initialized, and configured, the **Log In** screen is the first screen the operator will see after waking the device from Power Save mode.

3.2 View Information Screen

The Information screen provides details about the owner of the PFTP device and contact information if the device is lost or stolen.

To view the **Information** screen:

2. Tap the screen to display the **Log In** screen.

At the **Log In** screen:

3. Tap the **Information** icon.

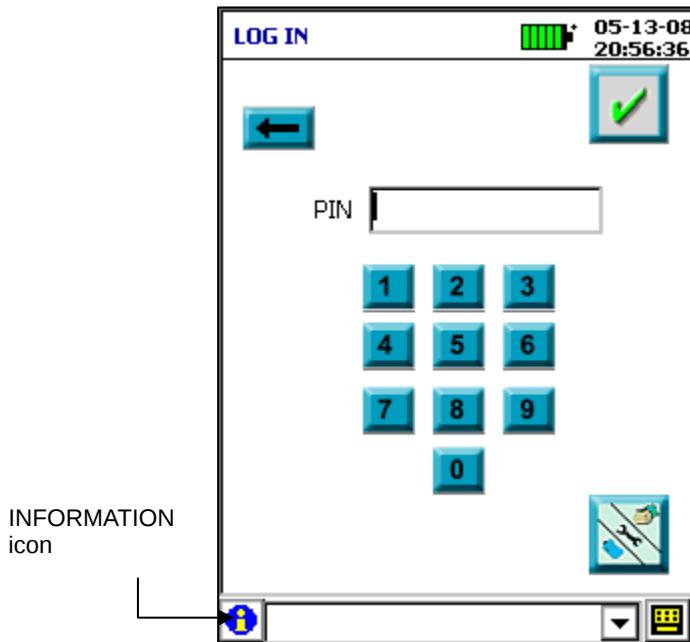


Figure 20: Icon for Owner Information

A popup menu is displayed.

Tap the **About HCP** list item.

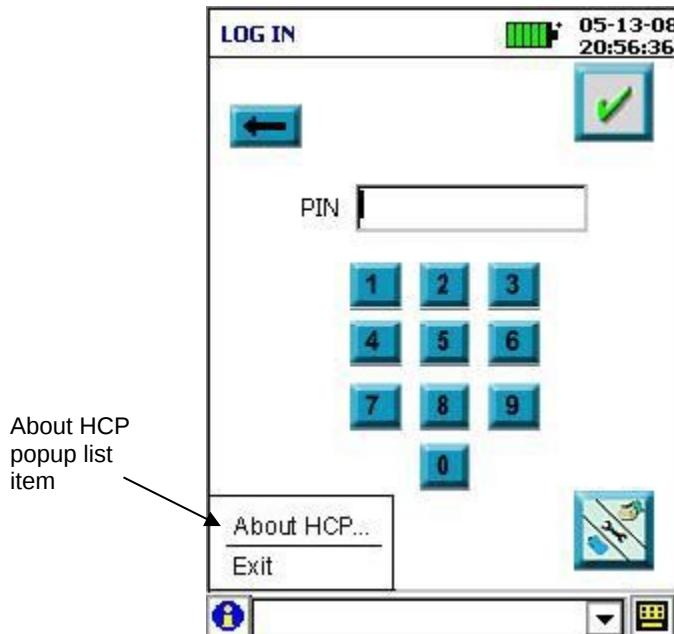


Figure 21: Owner Information menu

The **Information** screen is displayed.

4. To return to the previous screen, tap the **ESC** button.



Figure 22: Owner Information screen

3.3 Start Shift

Each authorized operator of the PFTP has his or her own operator card and related Personal Identification Number (PIN).

To log in to the PFTP:

5. Ensure the power for the device is turned on by pressing the power button, which is located at the top of the device, on the right side.

The **Log In** screen will be displayed.

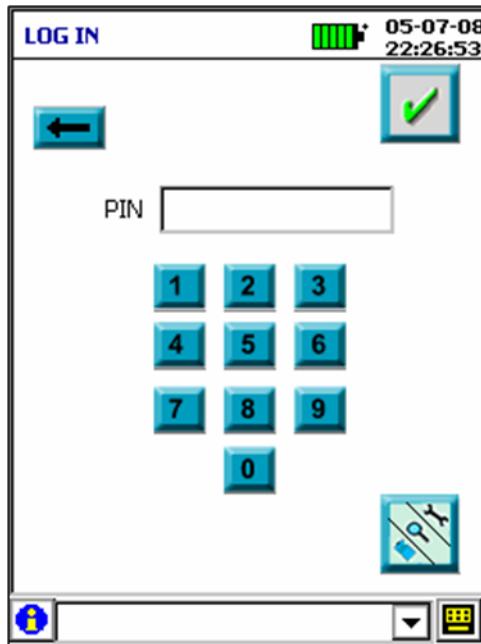


Figure 23: Log In screen

The PFTP will use the default login role on the card. If you want to log in using a different role, see section 3.4 Select Role 26.

6. Enter your PIN in the **PIN** field. Use the numbered buttons below the field to enter your PIN.

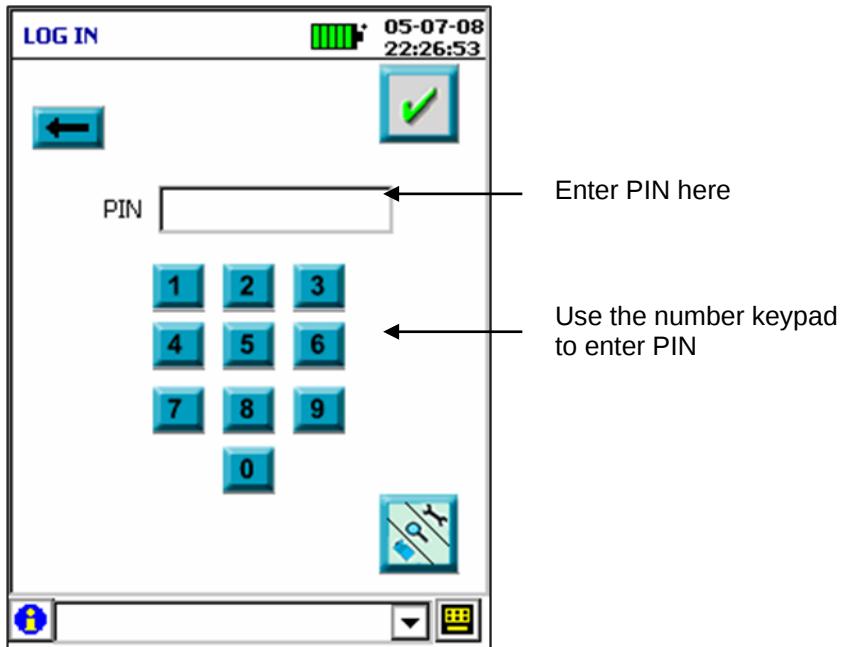


Figure 24: Log In screen

The PIN will be displayed as asterisks, so your PIN is kept secret.

7. Tap the **Reader** button.

This will display the **Log In (Present Card)** screen:

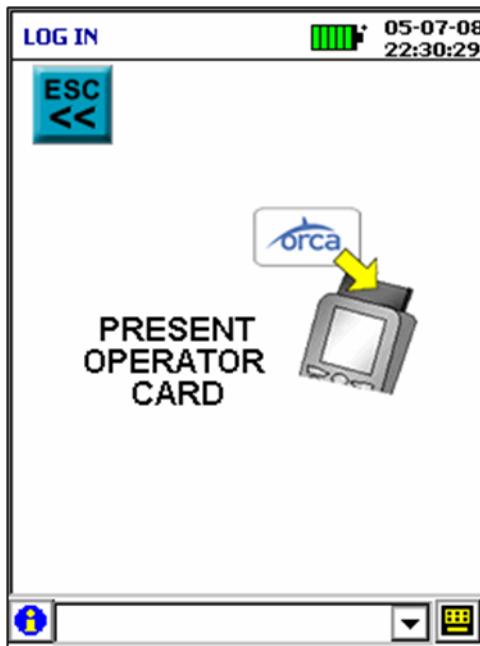


Figure 25: Present Operator Card message

8. Present your operator card at the card reader. This action is referred to as “tagging” the card.

The PFTP will compare the PIN used to the stored login information on the card. If the card information and PIN do not match, the **Incorrect PIN** screen is displayed to indicate an invalid login.

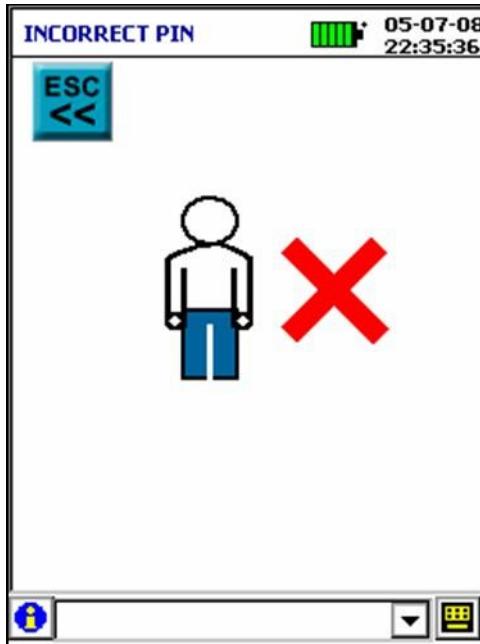


Figure 26: Incorrect PIN screen

If the **Incorrect PIN** screen displays, return to the **Log In** screen by pressing the **ESC** key or by tapping the **ESC** icon.

Note: When the **Incorrect PIN** screen displays, the card is blocked after a predefined number of invalid retries.

If the login is valid, the **Start Trip** screen is displayed, and the operator continues with the procedure as described in section 3.5 Start Trip 29.

3.4 Select Role

There are three roles that can be allocated to an operator:

- Operator
- Supervisor
- Maintenance Operator

This manual covers only the Operator and Supervisor roles. The Maintenance role is covered in a separate maintenance manual.

If you have multiple roles allocated, one role is designated as your default role. When you log in to your default role, you do not need to specifically select that role. At the **Log In** screen, after entering your operator PIN, you can tap the **CHECK** icon to log in directly.

This procedure describes how to log in with a non-default role.

1. At the **Log In** screen, enter **PIN**.
2. Tap the **Select Role** button.

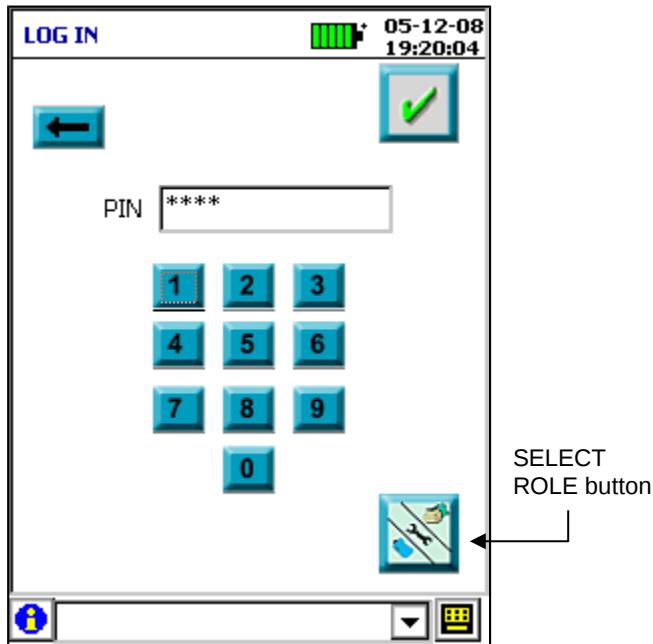


Figure 27: Log In screen

The **Select Role** screen is displayed.

3. Tap required **Role** button.

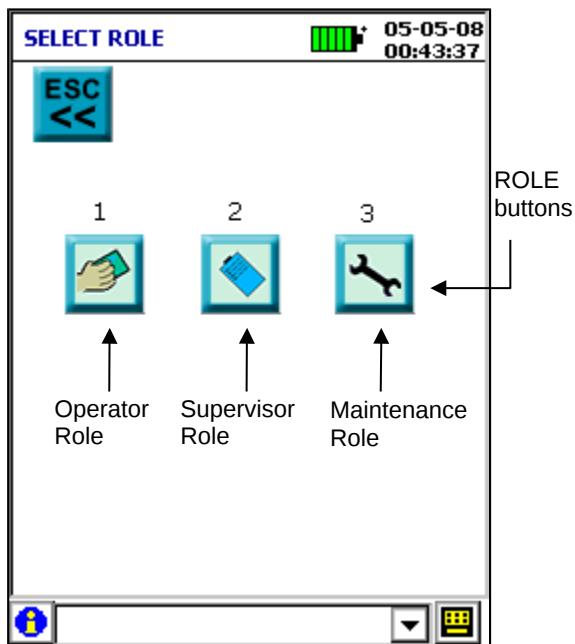


Figure 28: Select Role screen

If you select a role for which you are authorized, the **Valid Login** screen displays, then the appropriate initial screen for that role is displayed ready for you to proceed.

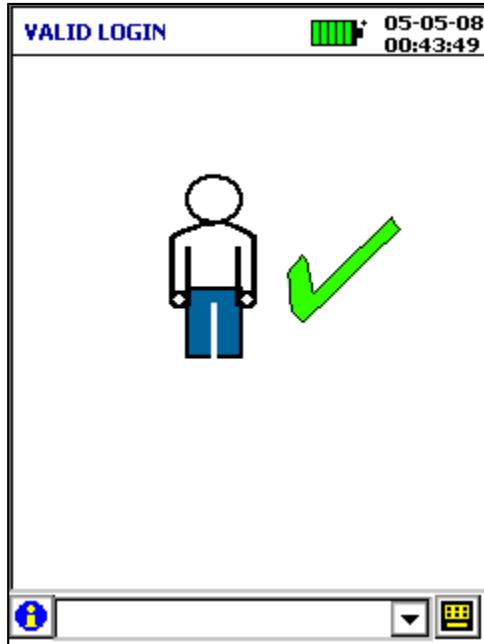


Figure 29: Valid Role screen

If you select a role for which you are not authorized, access is denied and the **Invalid Role** screen is displayed.

To return to the **Select Role** screen, tap the **ESC** button.

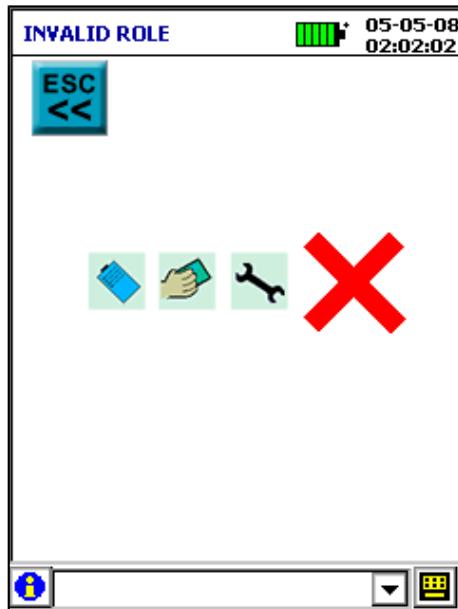


Figure 30: Invalid Role screen

3.5 Start Trip

After logging in to start a shift (see section 3.3 Start Shift 24), you must set the trip parameters before starting the trip so that the correct fare is collected from passengers' fare cards.

After login, the **Start Trip** screen is displayed.

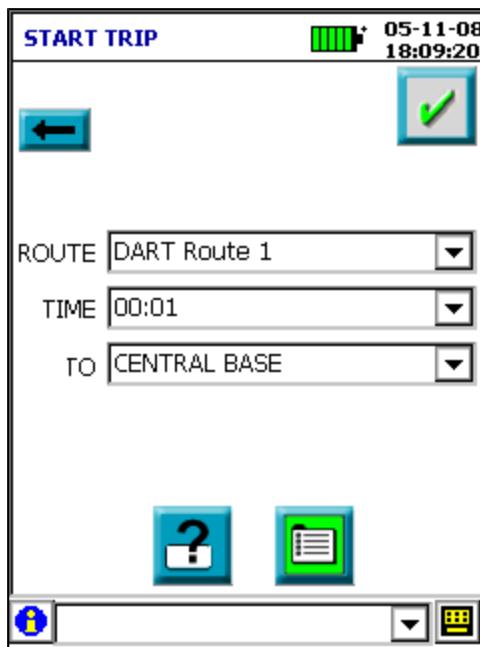


Figure 31: Start Trip screen

4. Tap the **ROUTE** drop-down arrow.

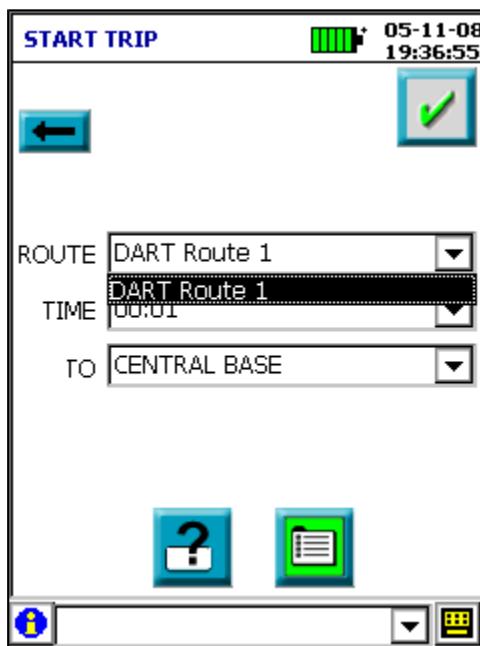


Figure 32: Route drop-down list

5. Select the required route by tapping the route in the **ROUTE** drop-down list.
6. Tap the **TIME** drop-down arrow.

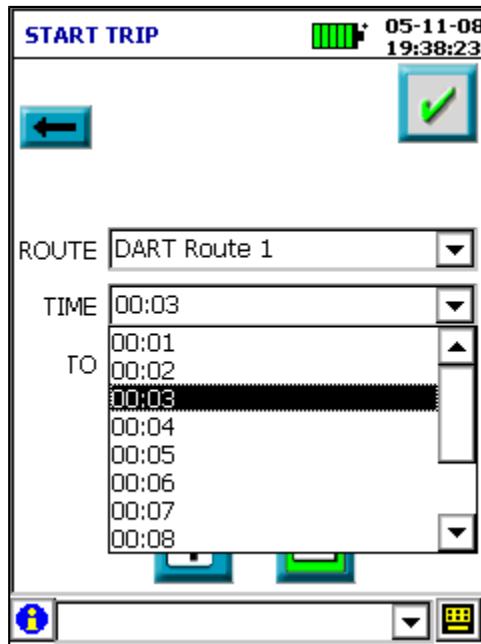


Figure 33: Time drop-down list

7. Select the required time by tapping the time in the **TIME** drop-down list.
8. Tap the **TO** drop-down arrow.

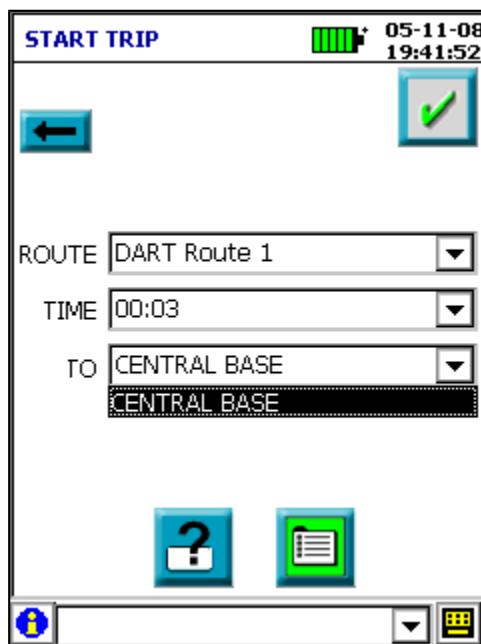


Figure 34: To (destination) drop-down list

9. Select the required destination by tapping the destination in the **TO** drop-down list.
10. Click the **CHECK** icon or press **Enter** to confirm the trip selection.

The **Fare Mode** screen displays.

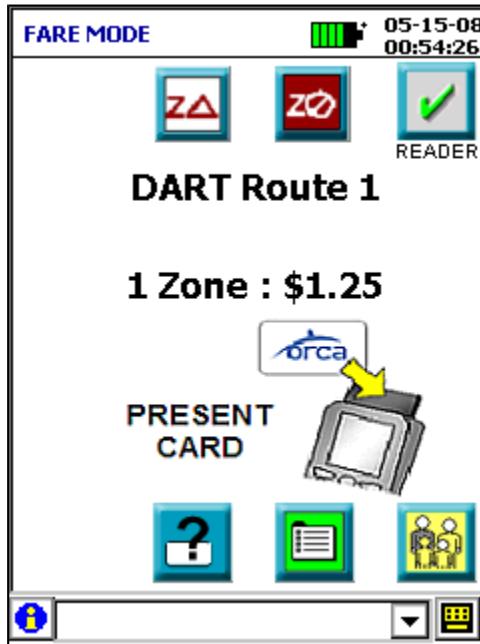


Figure 35: Inspect Cards screen

The PFTP device is now ready for inspecting fare cards and for providing details for passenger inquiries.

3.6 Fare Mode

Upon starting a new trip, the PFTP enters Fare mode. This procedure describes how you process passenger fares.

You can Change or Override Zone settings from this screen.

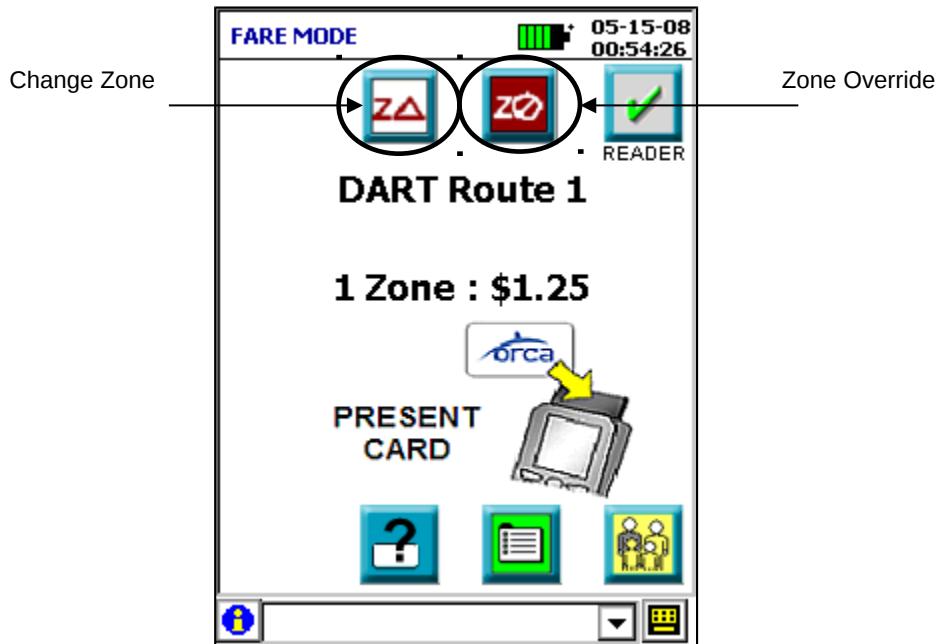


Figure 36: Fare Mode screen – Change Zone and Zone Override icons

To change zones:

1. Click the **Change Zone** icon.

The **Select Fare** screen displays.

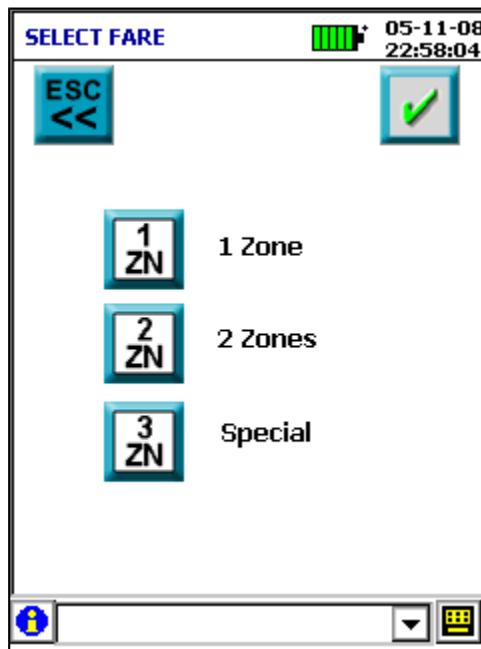


Figure 37: Select Fare screen

2. Select the appropriate **Zone** icon.

3. Click the **CHECK** icon.

The **Fare Mode Present Card** screen displays.

To override the zone:

1. Click the **Zone Override** icon.

To process passenger fares, start from the **Fare Mode** screen.

1. If the reader is off, tap the **Reader** button.

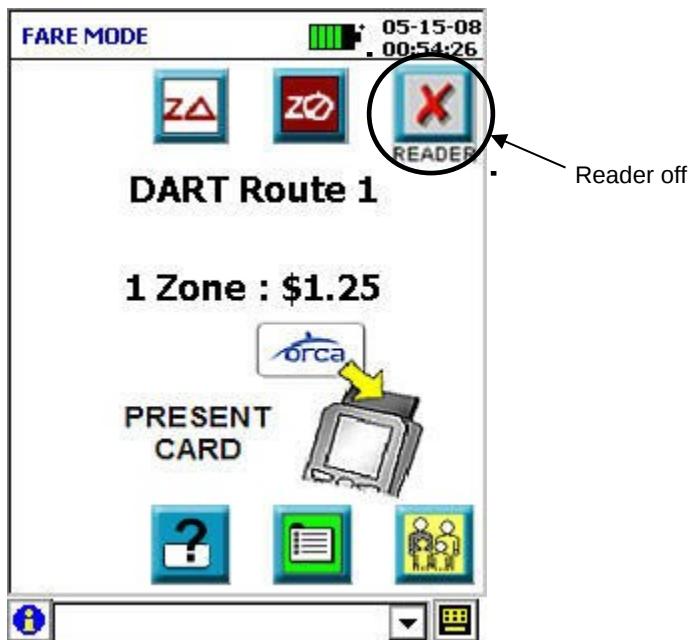


Figure 38: Fare Mode screen – Reader Off

The reader is activated and the icon changes from a red "X" to a green checkmark.

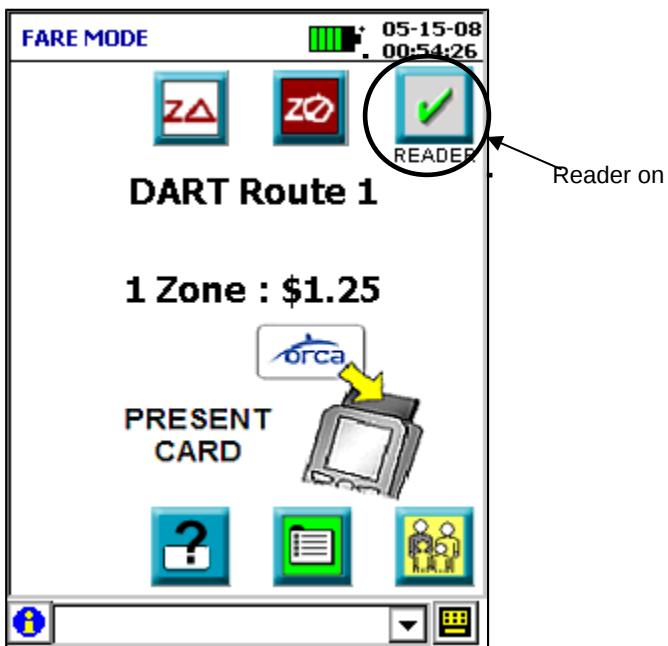


Figure 39: Fare Mode screen – Reader On

2. Present the passenger card to the reader.

The screen displays the fare details, including the product used for this trip and the expiration date of the product. The PFTP sounds a beep.

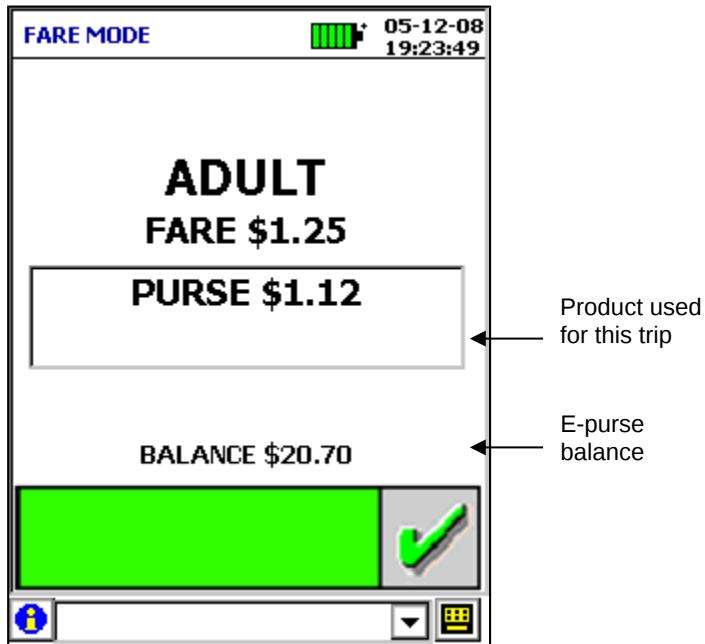


Figure 40: Transaction example

Following a CD-defined timeout, the **Present Card** screen is displayed.

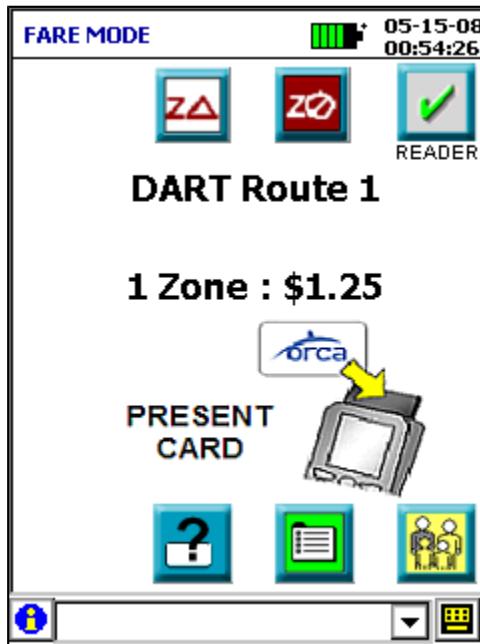


Figure 41: Fare Mode screen – Present Card

3.7 Transactions

This section describes Fare Mode screens that are displayed during various transaction processes. Some processes include the PFTP emitting a range of audible beeps.

3.7.1 Basic Layout

Figure 42 shows an example of the basic layout of the transaction screen.

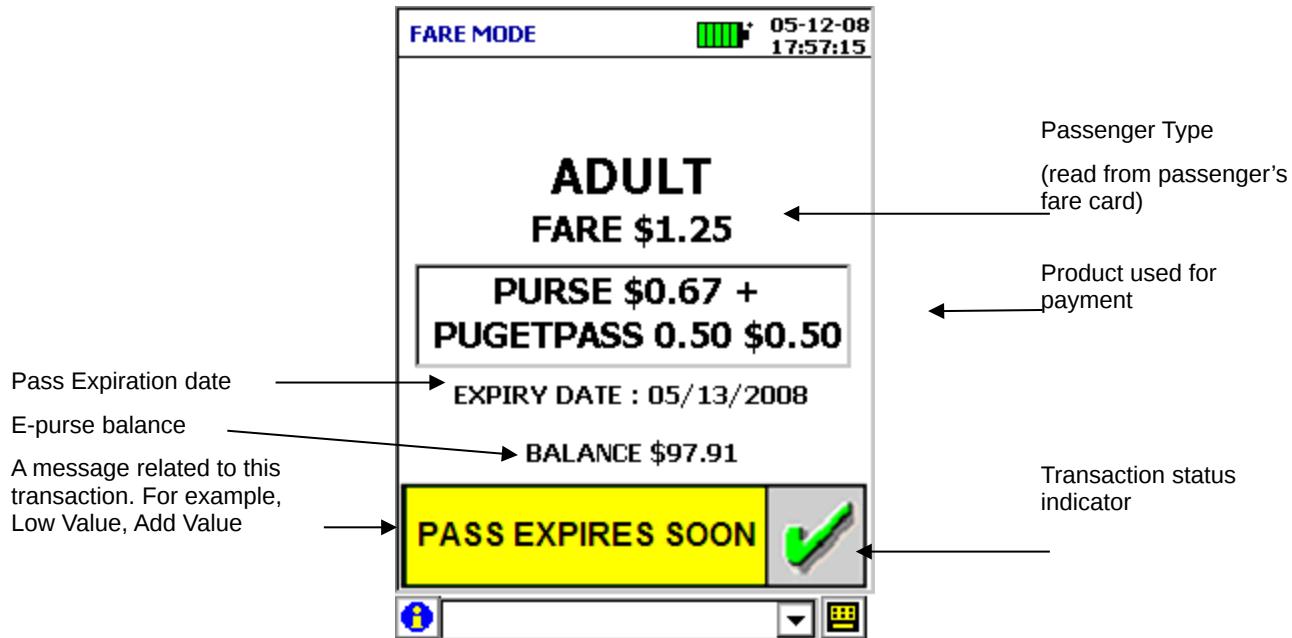


Figure 42: Transaction example

3.7.2 Transaction Type Indicators

The following screens display examples of typical transaction types.

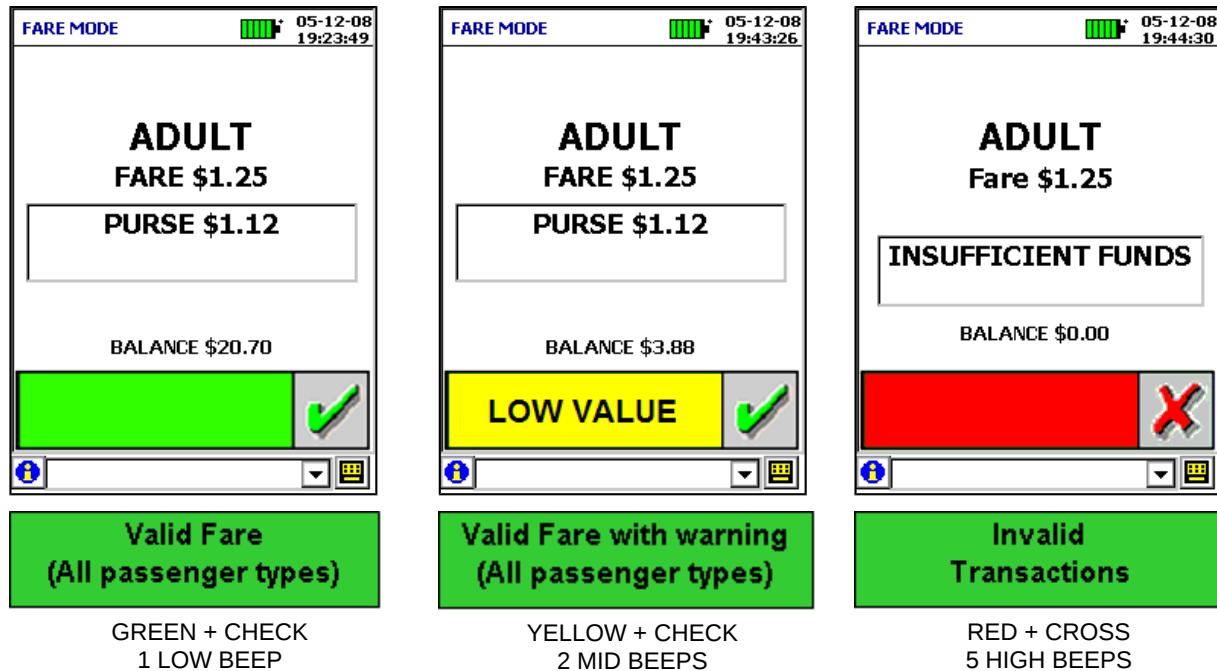


Figure 43: Transaction Type Indicator examples

3.7.3 Transactions by Passenger Types

Full-fare, paid transactions include no warnings.

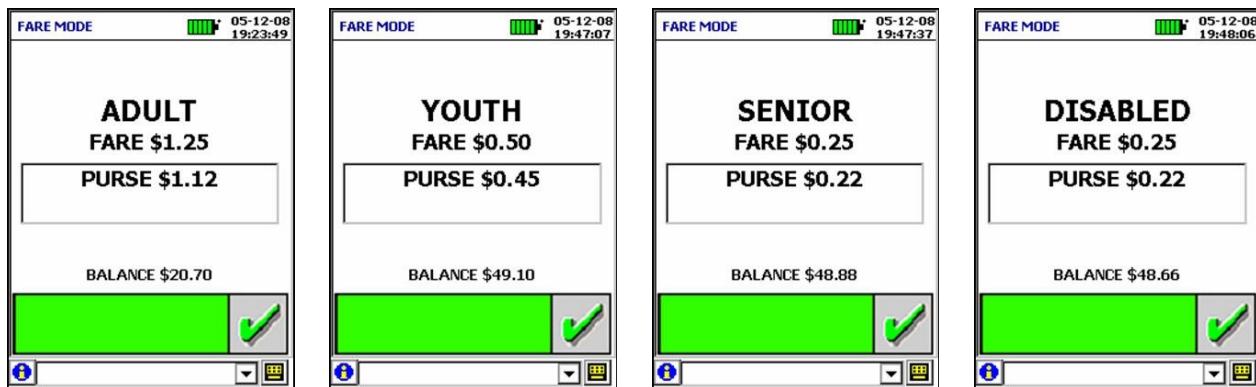


Figure 44: Transaction examples by Passenger Type

3.7.4 Transaction Examples by Payment Type

Transactions can be paid in a variety of ways, including e-purse, period pass, multiride product, or a combination.

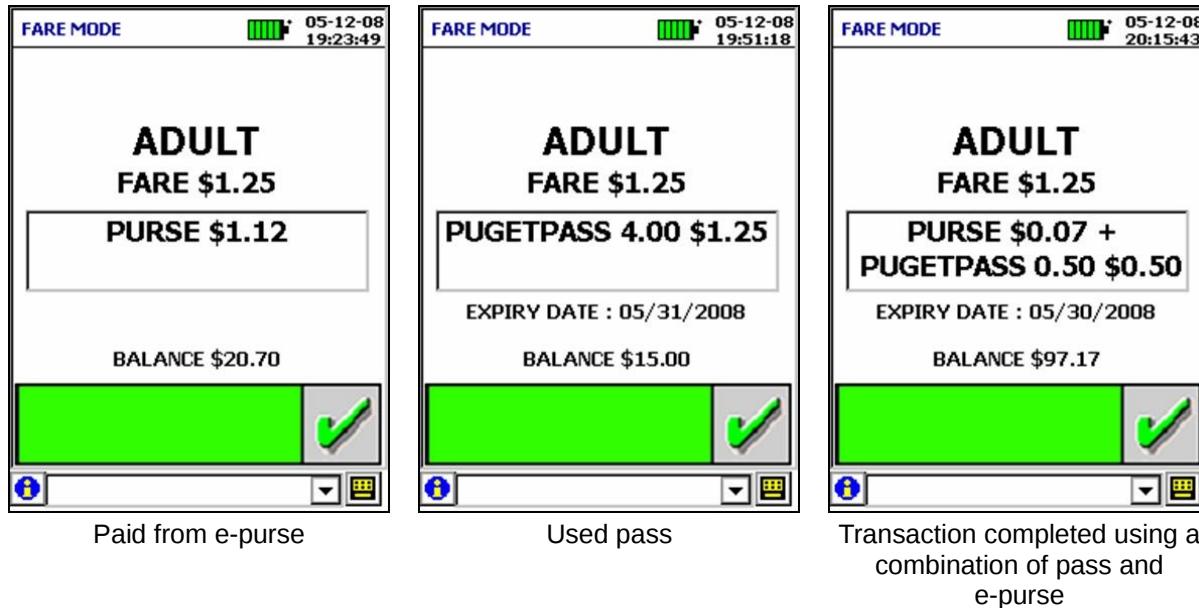


Figure 45: Transaction examples by Payment Type

3.7.5 Transaction Examples with Warnings

Warnings are provided to passengers to indicate when their cards are running low on available funds or when current passes are due to expire. Warnings also notify when new e-purse value or a new pass is added to a card.



Figure 46: Transaction examples with Warnings

3.7.6 Examples of Invalid Transactions

The following screens show examples of invalid transactions.



Invalid for any of the following reasons:

1. No valid pass and e-purse = \$0.00.
2. Card marked as lost or stolen. Passenger has to see customer service to get the card unblocked.
3. Not configured as an ORCA Card.

Card expiration date has been reached and a replacement card is required.

A Passback violation occurs when a passenger tries to use their card again at the same PFTP within preset time. NOTE: Use Group fare to pay for multiple passengers with a single card (see section 3.8 Multiple Passenger Fare 40).

Incomplete transaction aborted. Present card again.

Figure 47: Invalid Transaction examples

3.7.7 E-purse Underpayment Example

When the amount in an e-purse is not enough to cover the fare, the following transaction occurs.

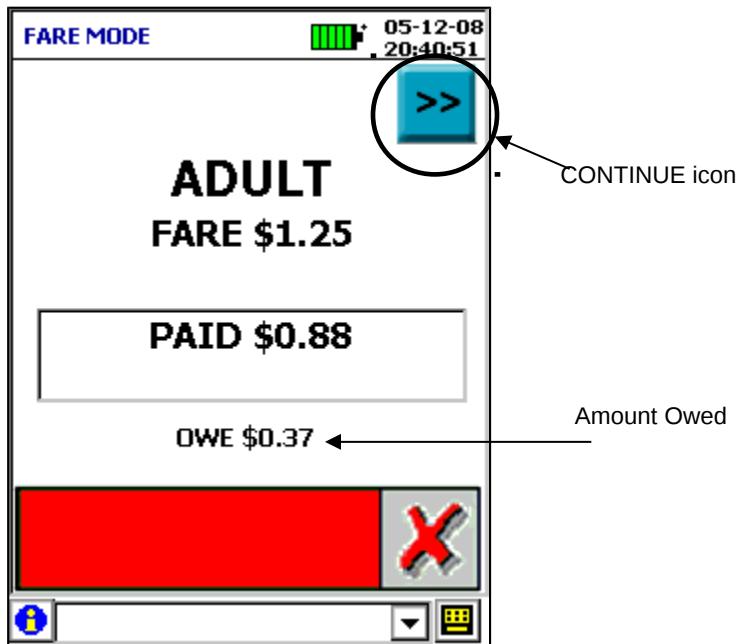


Figure 48: Underpayment Transaction example

The amount owed displays. The remaining fare can be collected per Agency policy. Click the **Continue** icon or press **Enter** to return to the **Fare Mode Present Card** screen.

3.8 Multiple Passenger Fare

This feature of the PFTP allows a group of passengers to pay through one transaction. The multiple fares can be paid using any combination of cash, e-purse, or pass that is valid on the fare card.

3. At the **Fare Mode** screen, press the **6** hotkey (or tap the **Multiple PSGR** icon).

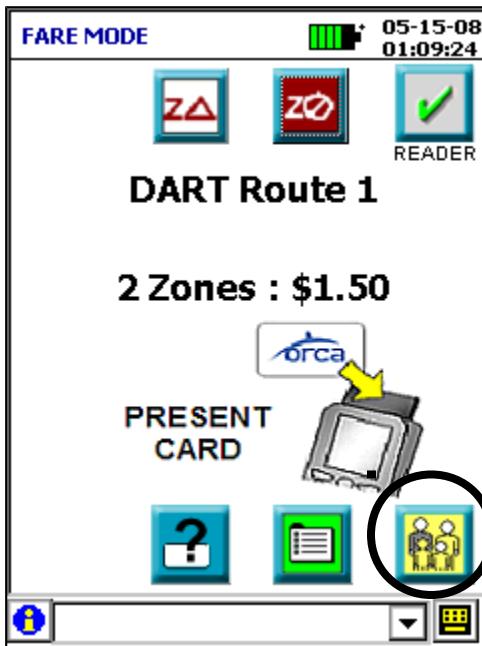


Figure 49: Fare Mode screen – Multiple Fare button

The **Multiple PSGR** screen is displayed with Adult field selected.

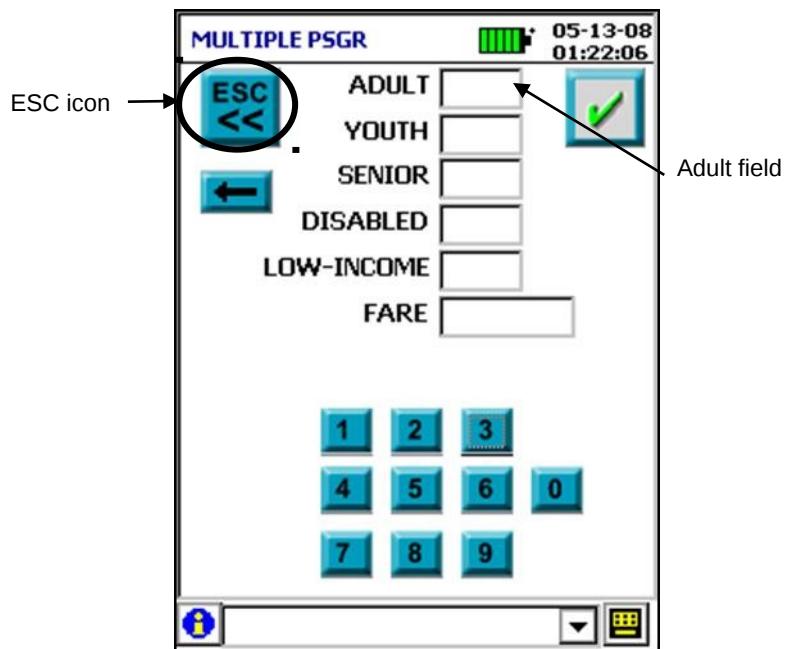


Figure 50: Multiple Passenger screen

To cancel the Multiple Passenger operation, press the **ESC** hotkey or tap the **ESC** icon.

The display will return to the **Fare Mode** screen ready for a new transaction.

4. Enter the number of adults by using the hotkeys or tap the numbers on the display screen.

The **Fare** field in the following example shows the total amount of the group fare.

The screenshot shows the PFT display with the following data:

- Top Right:** Date: 05-15-08, Time: 01:15:28
- Passenger Categories:**
 - ADULT: 2
 - YOUTH: 2
 - SENIOR: 0
 - DISABLED: 0
- FARE:** \$4.50
- Number Buttons:** A group of buttons labeled 1, 2, 3, 4, 5, 6, 7, 8, 9, and 0.

Figure 51: Multiple Passenger Fare example

5. If required, press the Directional Toggle down button or the **Tab** hotkey to select the next passenger description field or use the stylus to tap inside the required field.
6. Repeat the process until all passenger descriptions in the group fare transaction equal the number of people to be included in the group.

The following example shows data for several of the passenger types, as part of a multiple passenger transaction.

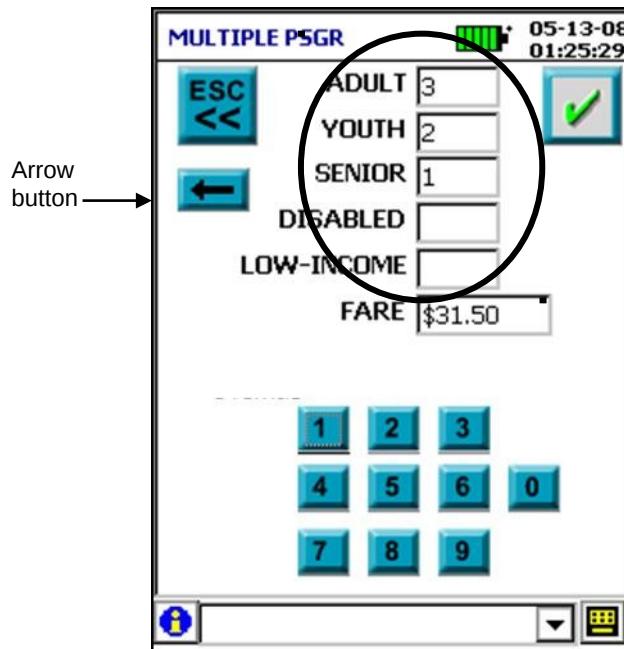


Figure 52: Clear Entries on Multiple Passenger screen

If the values are incorrect, press the **BKSP** hotkey or tap the **Arrow** button.

The passenger type fields are cleared and **Fare** field reset to \$0.00.

- Once the values are correct, press the **Enter** hotkey or tap the **CHECK** button.

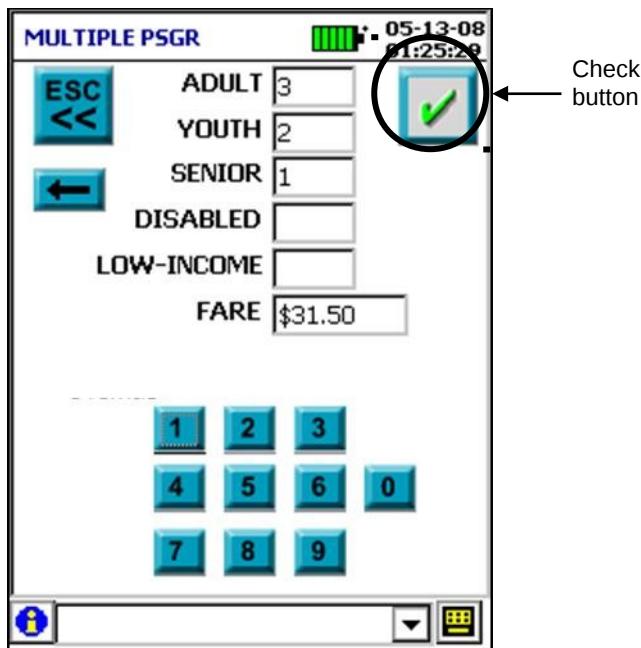


Figure 53: Check button to accept or use Enter key

The Multiple PSGR Present Card screen is displayed.

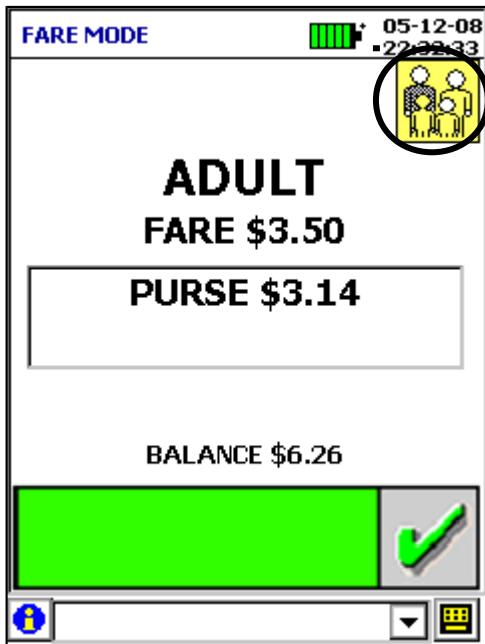


Figure 54: Multiple Passenger Fare displayed

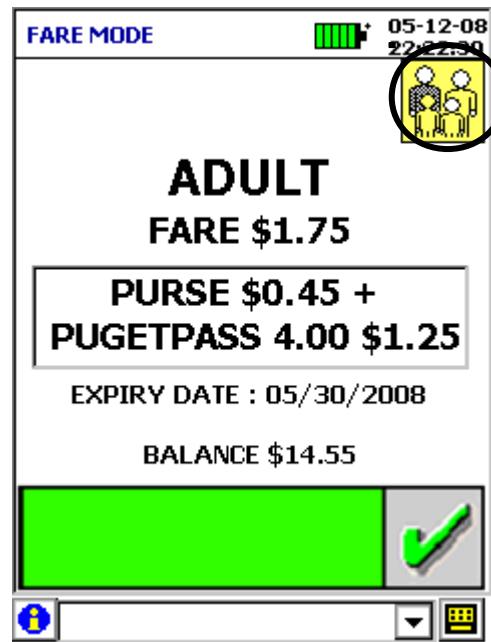
If the "X" button is showing, the Card Reader has automatically turned off.

8. Press either the **Enter** hotkey or tap the **Card Reader Off** button to turn on the Card Reader.
9. Present the fare card to the Card Reader.

The following displays show examples of multiple passenger transactions (with circles pointing out the **Multiple Passenger Transaction** indicator):



In this example, the entire fare has been paid from the e-purse.



In this example, the cardholder's fare has been covered by a pass and the rest of the fares have been paid from the e-purse. This is done automatically through the PFTP.

Figure 55: Multiple Passenger Fare Transaction example

After a preset timeout, the display will return to **Fare Mode** and is then ready for the next transaction.

3.9 Reverse Transaction

To reverse a transaction means to undo a sale. This occurs when, for example, passengers change their minds after the transaction has been completed.

Transactions can be reversed only on the most recent sale and within a preset time period following the transaction. In addition, it must be performed on the same PFTP and during the operator shift in which the original transaction took place.

While in **Fare Mode**:

10. Press the **9** hotkey or tap the **Options** button.

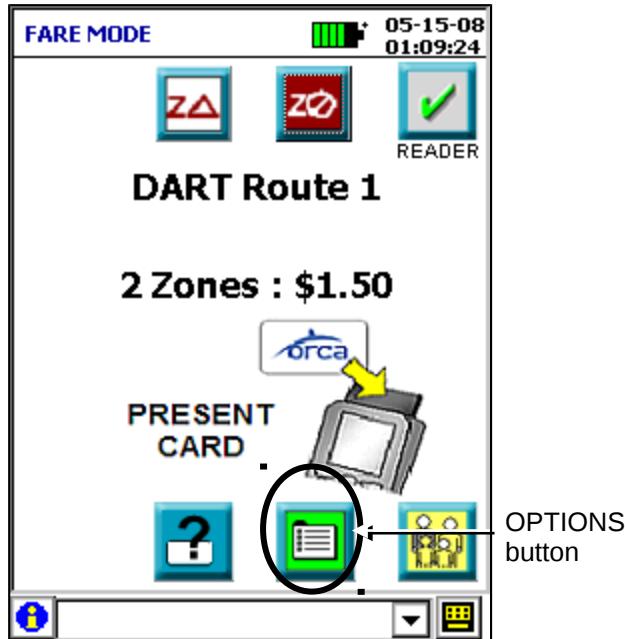


Figure 56: Options button on Fare screen

The **Trip Options** screen is displayed.

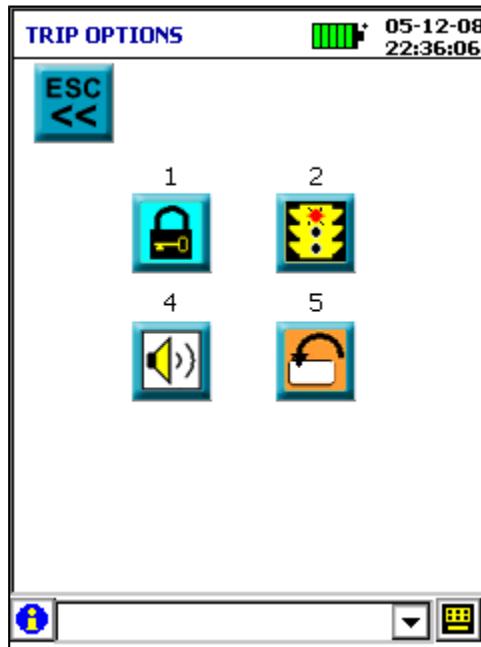


Figure 57: Trip Options screen

To cancel from the **Trip Options** screen, press the **ESC** key (or tap the **ESC** icon). The display will return to the **Fare Mode** screen.

11. Press the **5** hotkey (or tap **Reverse Transaction** button).

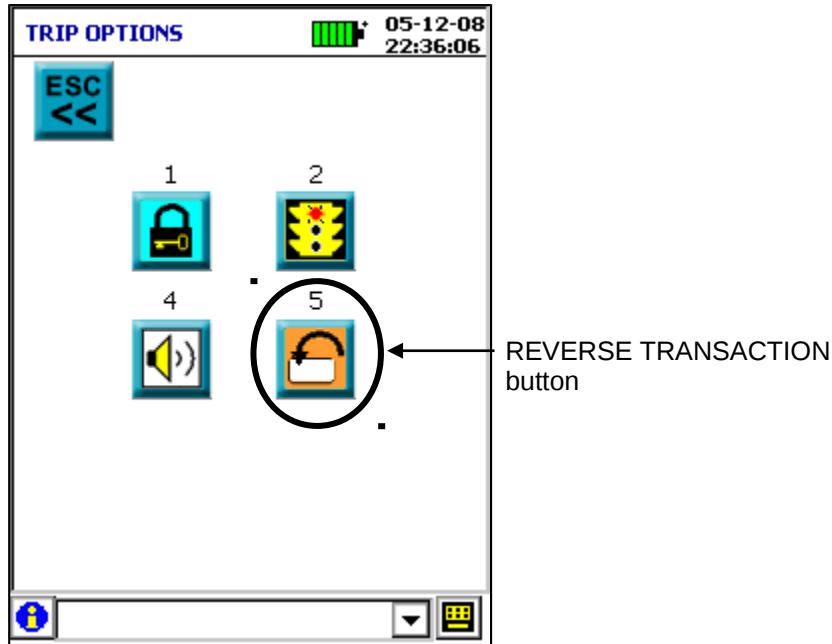


Figure 58: Options screen – Reverse Transaction button

The display on the **Reverse** screen shows the Reverse Transaction message.

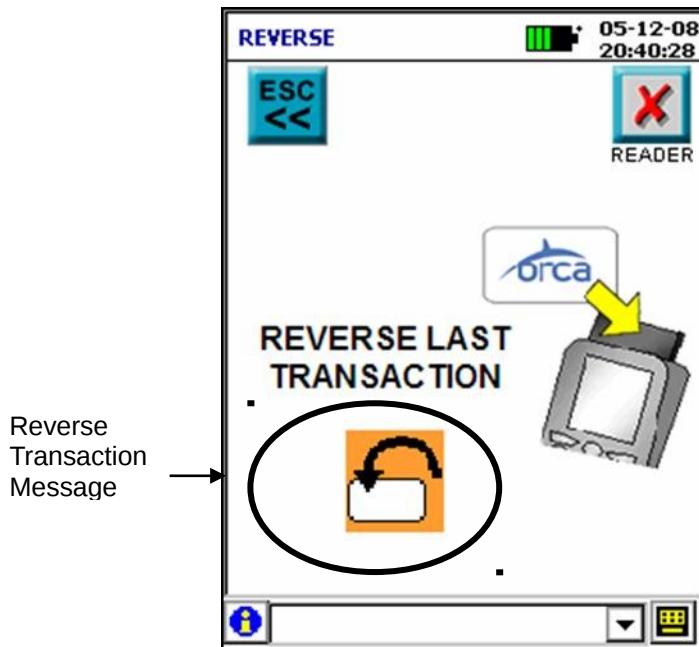


Figure 59: Reverse Transaction message



In this example, a transaction that deducted \$1.12 from the e-purse has been reversed.

In this example, a transaction that deducted one ride from a 10-ride product has been reversed.

Figure 60: Reverse Transaction examples

To cancel the reverse transaction operation, press the **ESC** hotkey or tap the **ESC** icon.

Display will return to the normal **Fare Mode** screen ready for the next transaction.

Press **Enter** hotkey or tap the **Card Reader Off** button to turn on the Card Reader.

3.10 Inquiry Mode

Inquiry mode allows the operator to examine all the information stored on a passenger's fare card.

To make a fare card inquiry:

12. At the **Fare Mode** screen, tap the **Inquiry** button.

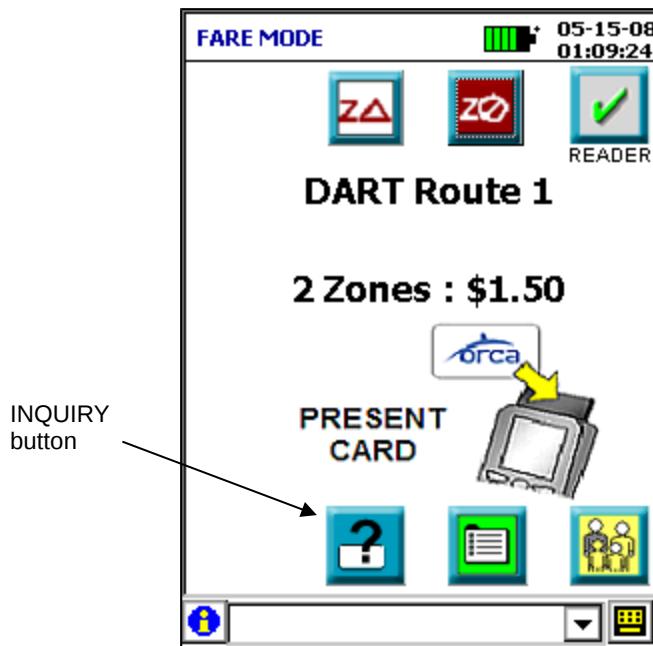


Figure 61: Fare Mode screen – Inquiry button

13. Present a fare card to the reader.

The card details will be displayed in the various fields on the **Card Inquiry** screen:

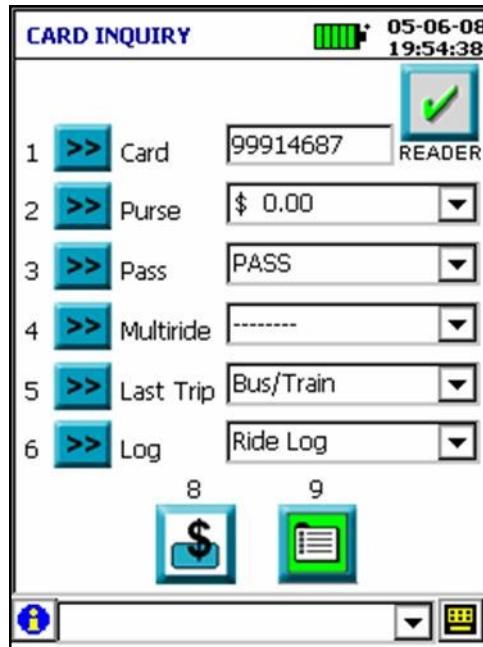


Figure 62: Card Inquiry screen

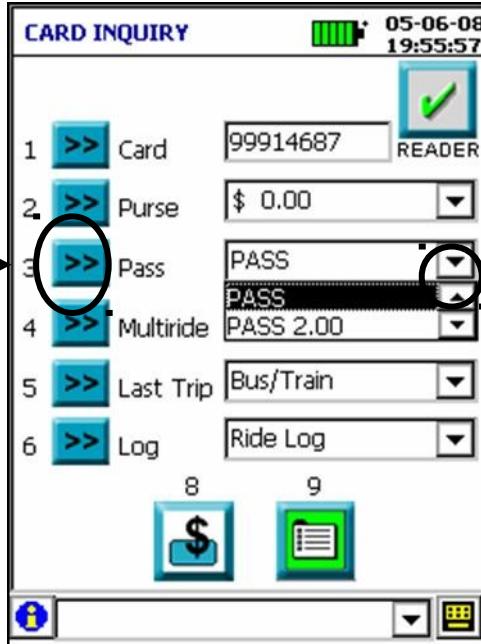
The details are displayed on the **Card Inquiry** screen with the **Card #** (number) field highlighted.

There are six different fields of information about the currently tagged card. The following example shows how to access the Pass details.

14. Use the Navigational Toggle Button to highlight the required pass then press the **Enter** hotkey to select it or tap the required item on the **Pass List**.

Note: The Navigational Toggle up and down arrows can be used to move up and down to select different fields on the display screen. The right arrow is used to open a field list. The left and right arrows are used to move up and down the items in the opened list.

This is the **Field Inquiry** button for the **Pass** field – the same as pressing the related number key



Use this button to open the list.

Select the item on the list that is to be viewed.

Figure 63: Card Inquiry – Pass Data Field

15. To view details of the selected item, press the appropriate number hotkey or tap the related **Field Inquiry** button.

This will display the details screen for the selected field. In the following example, the inquiry was made on the **Pass** field, so the **Pass Details** screen is displayed:

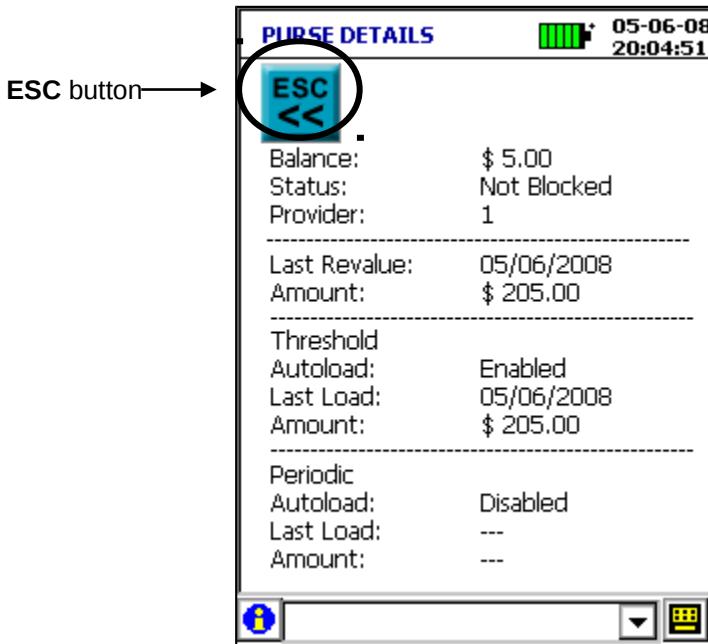


Figure 64: Pass Details

16. When you have finished viewing the details screen, press the **ESC** hotkey or tap the **ESC** icon.

The display returns to the **Card Inquiry** screen with the same card details displayed.

17. Follow steps 3 - 5 to view the details of other fields on the current card.

Note: The details of this card are cleared when another card is presented to the reader.

18. To return to Fare Mode from the **Card Inquiry** screen, press the **8** hotkey or tap the **Fare Mode** button.

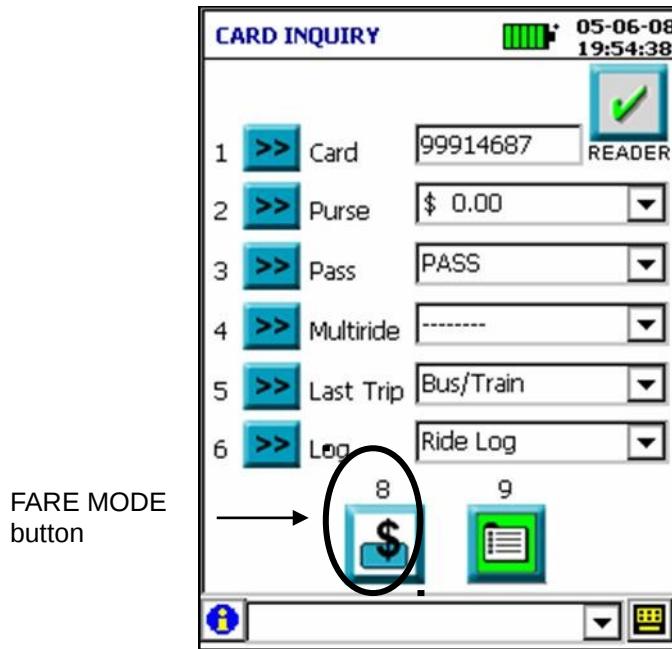


Figure 65: Inquiry screen – Fare Mode button

Details of the inquired card are cleared and the display returns to the **Fare Mode** screen.

The following are examples of fare details screens.

<p>CARD DETAILS</p> <p>ESC <<</p> <p>Passenger Type: YOUTH Status: NOT BLOCKED Vehicle(WSF): Unspecified</p> <hr/> <p>Version: 01 Issuer: RFCS Card #: 99914687 Lifecycle: 0 Type: MIFARE_DESFIRE Expiration: 04/29/2017 24:00:00 Format: ERG_TRANSAP Institution ID: Unspecified</p>	<p>PURSE DETAILS</p> <p>ESC <<</p> <p>Balance: \$ 5.00 Status: Not Blocked Provider: 1</p> <hr/> <p>Last Revalue: 05/06/2008 Amount: \$ 205.00</p> <hr/> <p>Threshold Autoload: Enabled Last Load: 05/06/2008 Amount: \$ 205.00</p> <hr/> <p>Periodic Autoload: Disabled Last Load: --- Amount: ---</p>
--	--

Card details **E-purse details**

Figure 66: Card Inquiry examples - Card and E-purse Details

PASS DETAILS		05-06-08 19:58:33
 <<		Metro Monthly Vanpool
Pass Name:	Pass B	
Expiration:	05/05/2008 24:00:00	
Face Value:	\$ 72.00	
Status:	Not Blocked	
Txn Seq #:	02	
Autoload:	NO	
Last Load:	---	
Duration:	1 Month/s	
Period Start:	04/01/2008 00:00:00	
Period End:	05/05/2008 24:00:00	
Vanpool #:	1234	

MULTI-RIDE DETAILS		05-06-08 20:42:16
 <<		WSF Mukilteo-Clinton
Product:	10 Ride Return	
Status:	Not Blocked	
Remaining:	10	
Expiration:	07/30/2008 24:00:00	
Origin:	---	
Destination:	---	

Last Revalue:	---	
Amount:	\$ 0.00	

Autoload:	Disabled	
Last Load:	---	
Amount:	---	

Txn Seq:	000001	

Pass details

Multi-ride details

Figure 67: Card Inquiry examples - Pass and Multi-ride Details

LAST TRIP		05-06-08 20:45:26
 <<		
Status:	Checked In	
Agency:	KCM	
Started:	05/06/2008	
Location:	Vanpool 1234	
Product 1:	-----	
Product 2:	Period/MultiRide	
Purse Last:	\$ 0.00	
Trip Total:	\$ 0.00	

Last ded:	05/06/2008	
Xfr Expiration:	05/06/2008	
Last TFC:	\$ 0.00	
Total TFC:	\$ 0.00	

LOG DETAILS		05-15-08 01:37:00
 <<		< >
RIDE LOG 1 of 7		
Validation:	Flat Fare Checked In	
Date/Time	05/15/2008 01:36:28	
Agency:	KCM	
Location:	Demand Service 10100	

Txn Type:	Pass Use	
Txn Value:	\$0.00	

Product 1:	-----	
Balance:	-----	
Product 2:	PASS 2.00	
Balance:	05/31/2008 24:00:00	

Deducted:	\$0.00	

Ticket details

Log details

Figure 68: Card Inquiry examples - Ticket and Log Details

3.11 End Trip

This section describes how to exit fare payments mode at the end of trip.

19. While in the **Fare Mode** or **Card Inquiry** screen, tap the **Options** button.

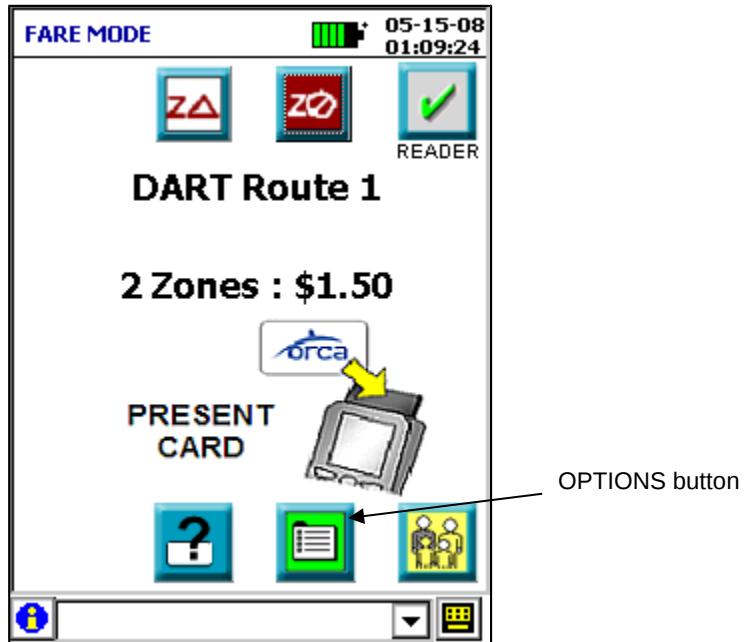


Figure 69: Fare Mode – Options button

The **Trip Options** screen is displayed.

20. Tap the **END TRIP** button

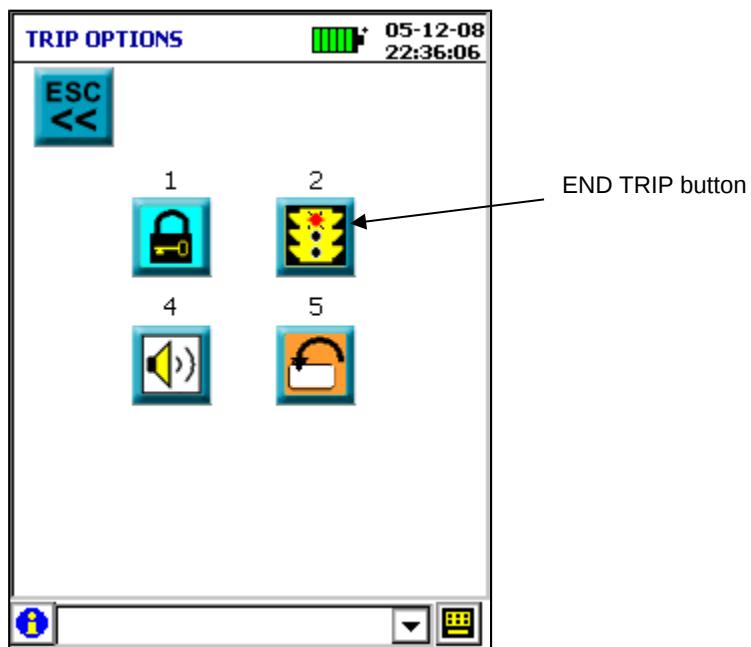


Figure 70: Trip Options screen – End Trip button

The **End Trip?** screen is displayed.

21. Tap the **CHECK** button to confirm the end of the trip.

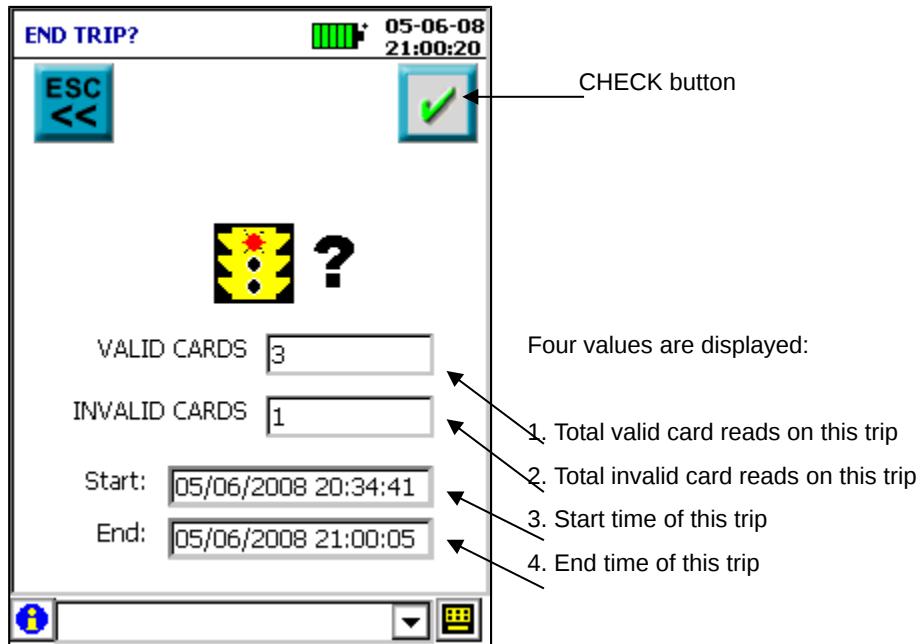


Figure 71: End Trip confirmation screen

The trip ends and the **Start Trip** screen is displayed, ready for the operator to select the next trip.

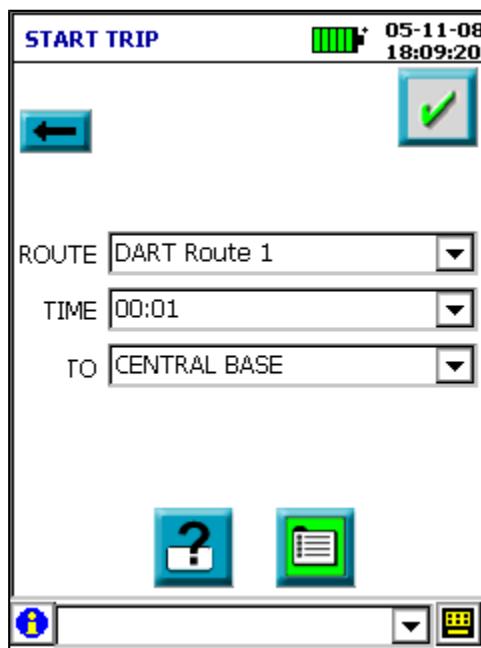


Figure 72: Start Trip screen

3.12 End Shift/End Day

This procedure describes how to finish a shift of work.

22. At the **Start Trip** screen, tap the **Options** button.

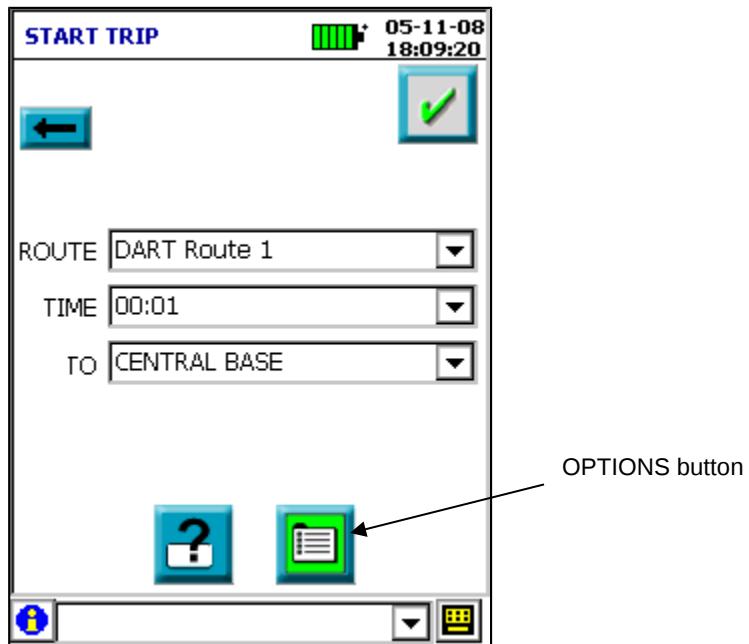


Figure 73: Start Trip screen

The **Shift Options** screen is displayed.

23. Tap the **End Shift** button.

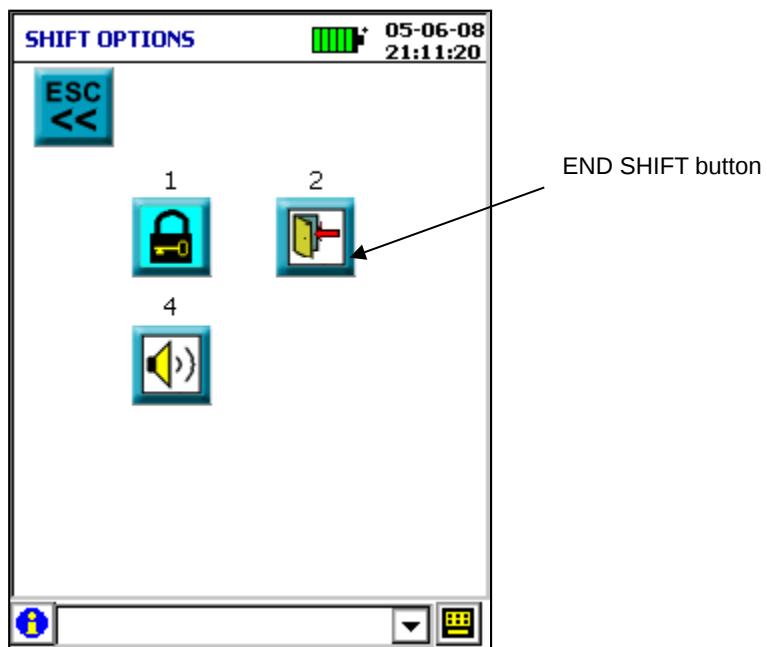


Figure 74: Shift Options screen

The **End Day?** screen is displayed.

24. Tap the **CHECK** button to confirm the end of the shift.

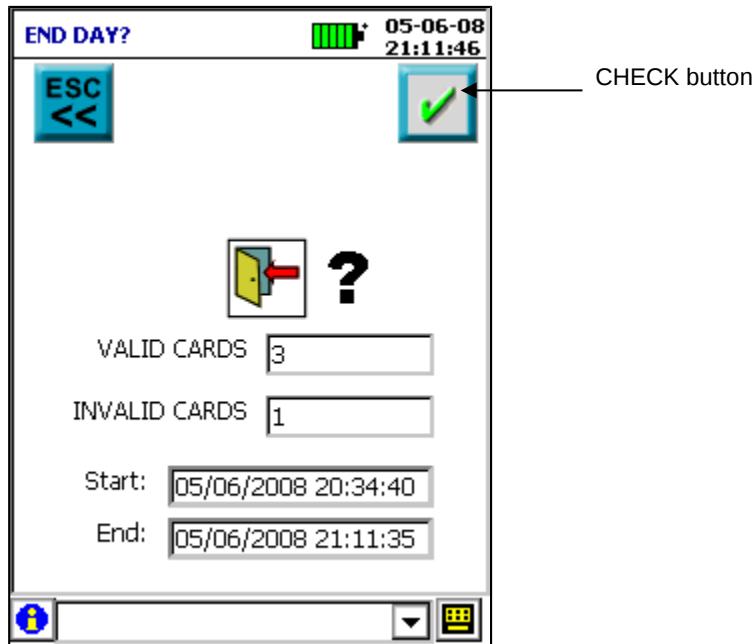


Figure 75: End Day? screen

If the PFTP is not being used immediately for another shift:

25. Return the PFTP to the charging cradle.

The PFTP is configured to transfer UD to the DAC via a modem connected to a standard telephone line in order to facilitate data transfer.

The PFTP detects the cradle and attempts to connect to the DAC and upload UD.

The device will connect to the DAC.



Figure 76: Data Transfer Connecting screen

The **Data Transfer** screen displays while the fare UD is uploaded to the DAC. If the PFTP fails to connect, the **Data Transfer Failed** screen displays.

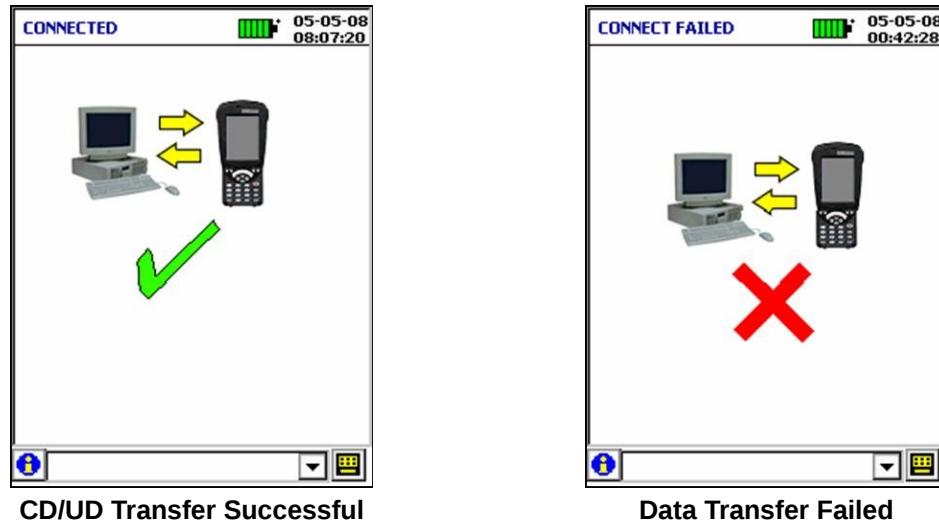


Figure 77: Data Transfer screen – Success and Failure examples

After successful completion of data transfer, the **Log In** screen is displayed.

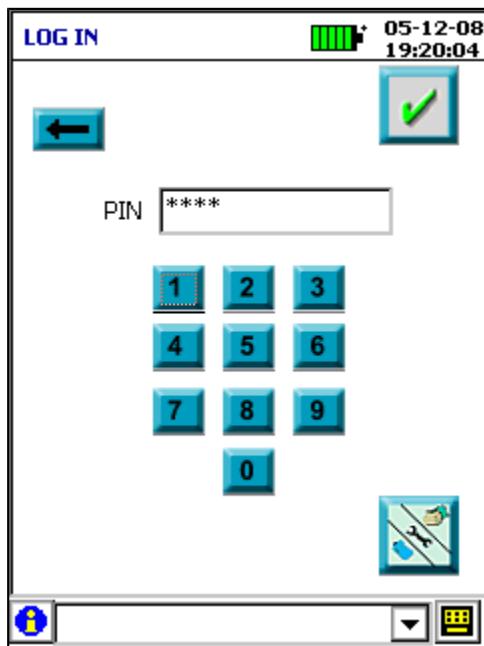


Figure 78: Log In screen

3.13 Lock/Unlock Device

The PFTP can be locked to stop unauthorized use. The PFTP also has an Auto Lock feature, which locks the device automatically when the device has not been used for a preset amount of time.

3.13.1 Locking the PFTP Device

To lock the PFTP device:

26. At either the **Fare Mode** or the **Start Trip** screen, press the **9** hotkey or tap the **Options** button.

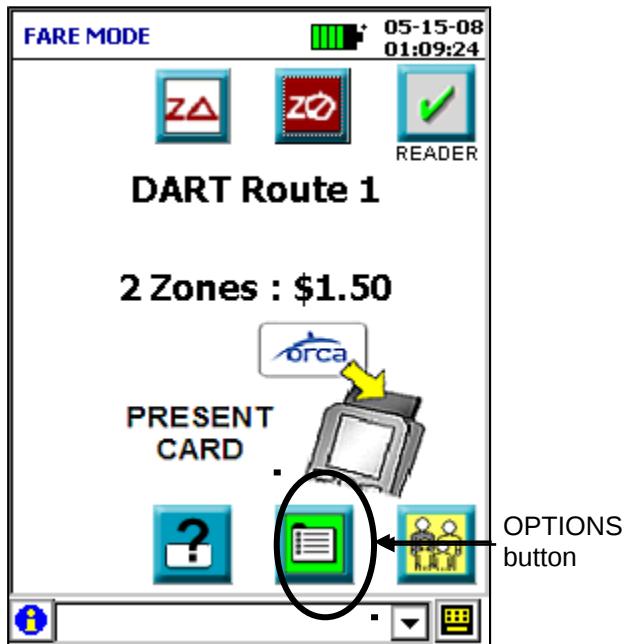


Figure 79: Fare mode screen – Options button

The relevant options screen (**Trip Options** or **Shift Options**) is displayed.

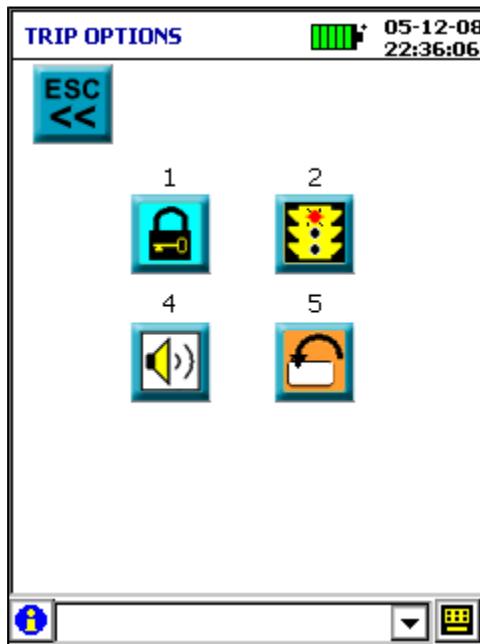


Figure 80: Trip Options screen

To cancel from the options screen, press the **ESC** hotkey or tap the **ESC** icon. The display will return to the previous screen (**Start Trip** or **Fare Mode**).

27. Press the **1** hotkey or tap the **Lock** button.

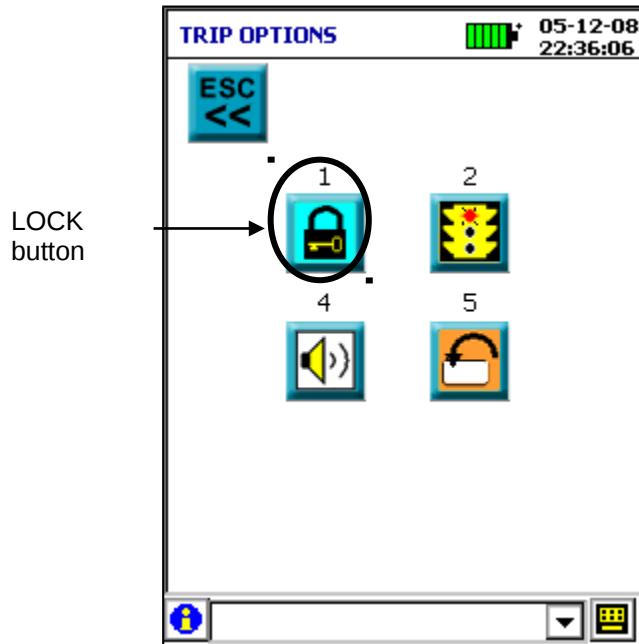


Figure 81: Trip Options screen – Lock button

The device will now be locked from use, and the **Device Locked** screen will be displayed.

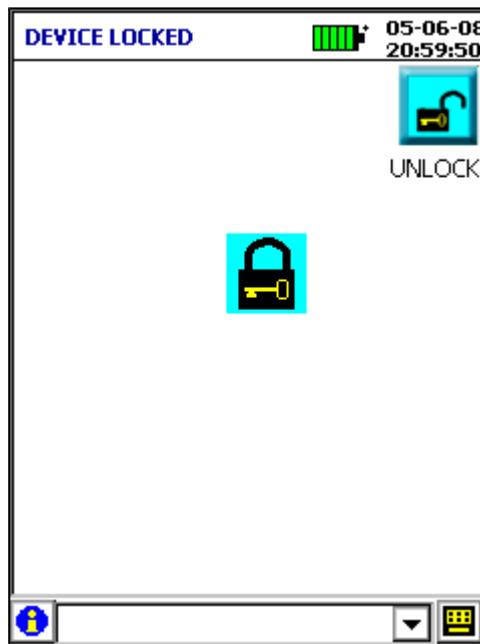


Figure 82: Device Locked screen

3.13.2 Unlocking the PFTP Device

To unlock the PFTP device:

28. At the **Device Locked** screen, press the **Enter** key (or tap the **Unlock** button).

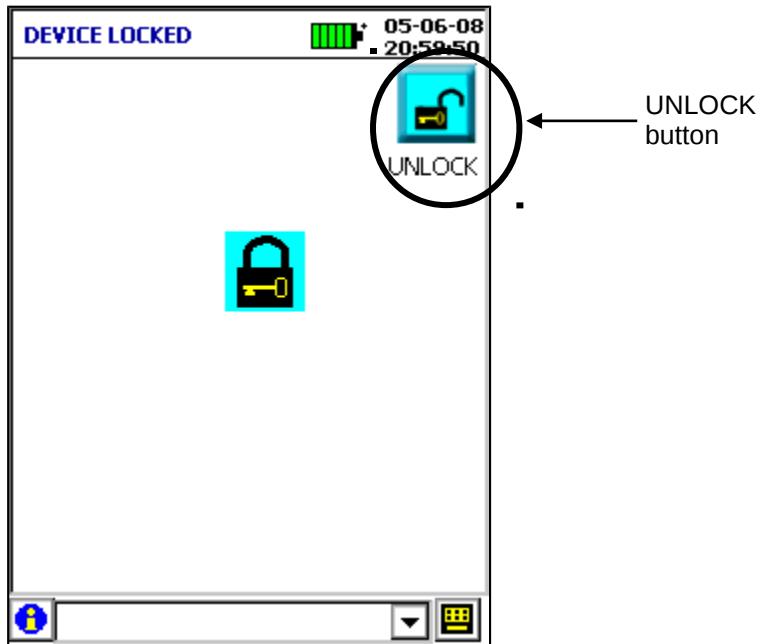


Figure 83: Device Locked screen – Unlock button

The **Log In** screen will be displayed.

29. Enter your PIN.

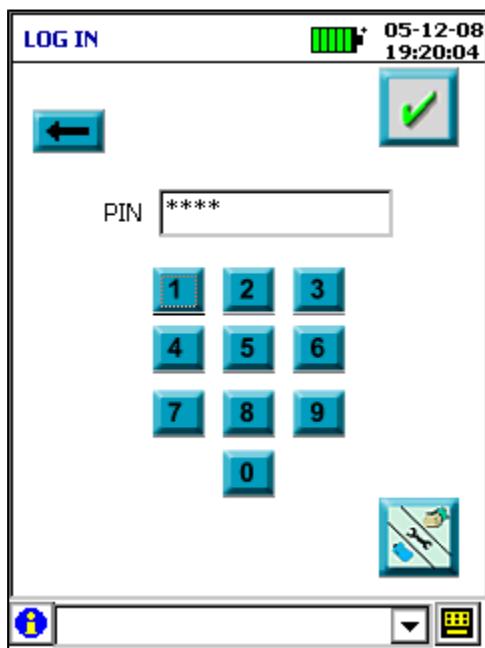


Figure 84: Log in screen

30. Press the **Enter** hotkey or tap the **CHECK** button.

The display returns to the screen from which the device was locked.

4 Supervisor Mode

For an operator to log in to Supervisor Mode, the PFTP device will have to be powered on. Press the **ESC** hotkey or tap the **ESC** button. The display will return to the **Log In** screen.

31. At the **Log In** screen, enter your PIN.
32. Press the **Select Role** hotkey or tap the **Select Role** icon.

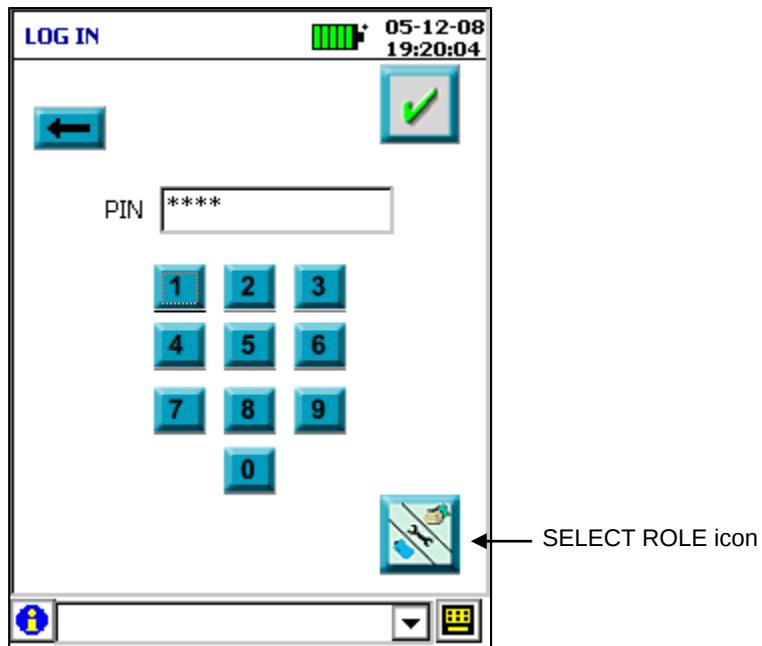


Figure 85: Log In screen

The **Select Role** screen is displayed.

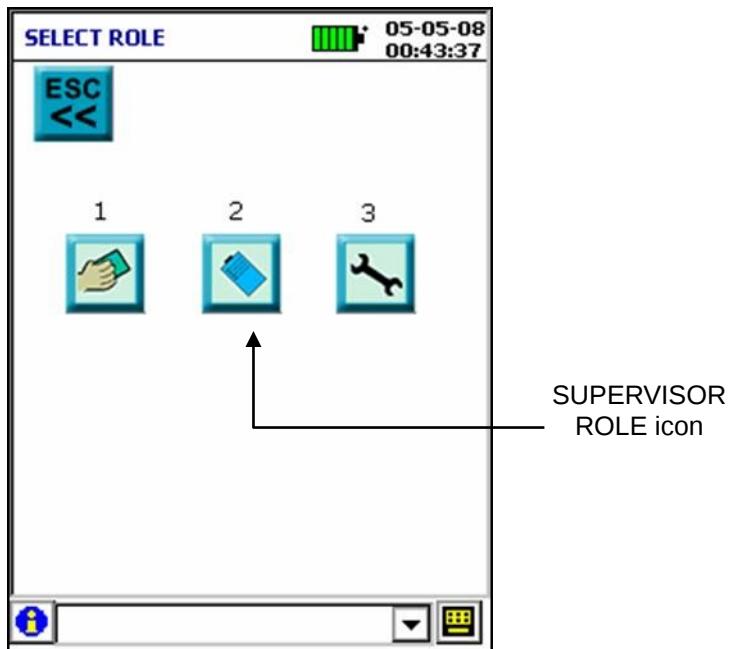


Figure 86: Select Role screen – Supervisor Role button

33. Press the **2** hotkey or tap the **Supervisor Role** icon.

The **Supervisor** screen displayed.

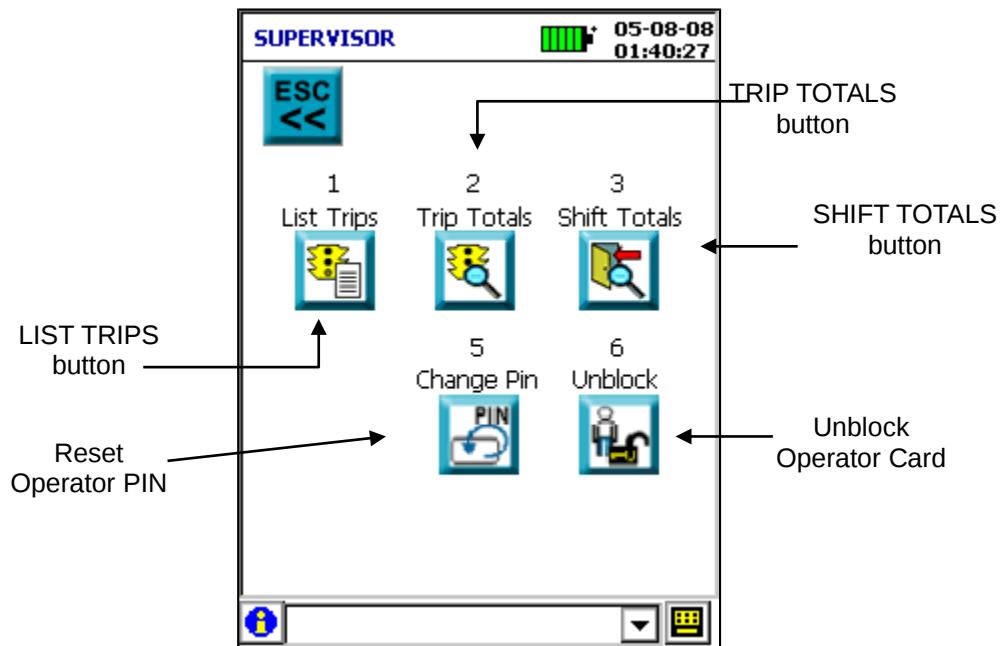


Figure 87: Supervisor screen

34. Press a number hotkey that corresponds to the desired task or tap the required button on the display screen.

4.1 Examples of Supervisor Screens

This section shows examples of the Supervisor screens that are displayed on the PFTP. From any of these screens, tap the **ESC** button to return to the **Supervisor** screen.

4.1.1 List Trips

The **List Trips** screen displays a list of the trips for the current shift.

Press the **List Trips** hotkey



or tap the **List Trips** button

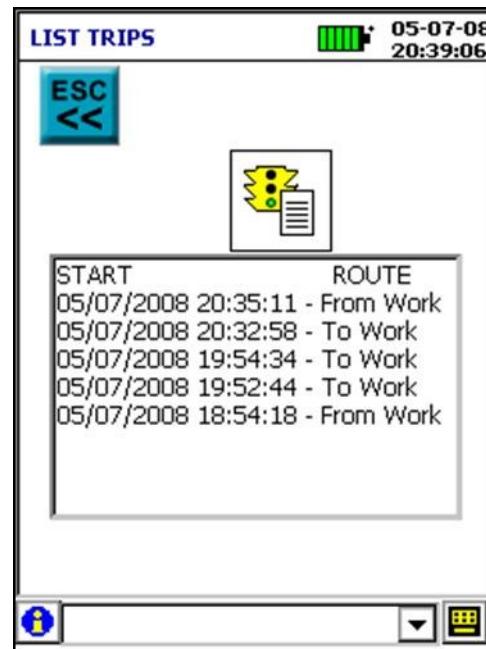


Figure 88: List Trips button and List Trips screen

4.1.2 Trip Totals

The **Trip Totals** screen shows the total of valid and invalid cards that have been presented to the PFTP for the current trip.

Press the **Trip Totals** hotkey



or tap the **Trip Totals** button

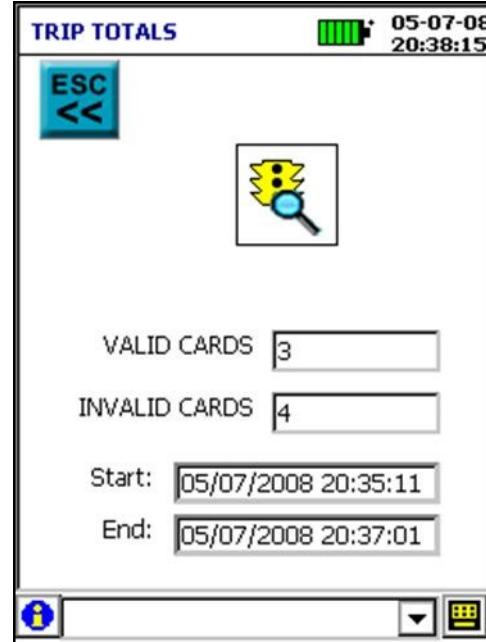


Figure 89: Trip Totals button and Trip Totals screen

4.1.3 Shift Totals

The **Shift Totals** screen shows the total of valid and invalid cards that have been presented to the PFTP for all trips on the current shift.

Press the **Shift Totals** hotkey



or tap the **Shift Totals** button

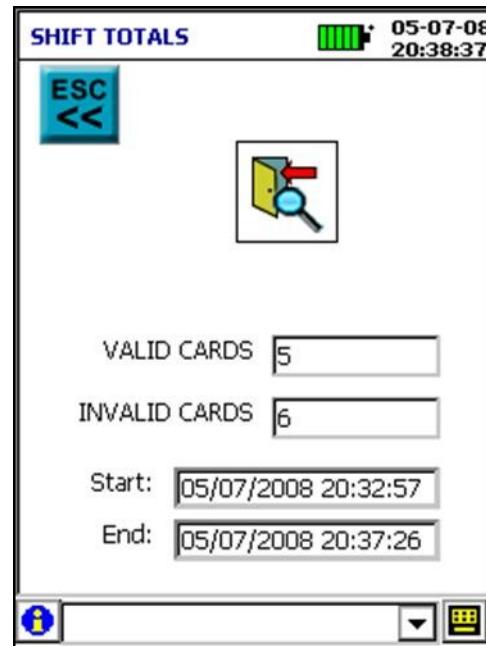


Figure 90: Shift Totals button and Shift Totals screen

4.1.4 Change PIN



The **Change PIN** screen is launched from the **Supervisor** screen. This screen allows you to create a new PIN for operator cards.

35. Tap the **Change PIN** button or press the **5** hotkey.
The **Change PIN** screen is displayed.

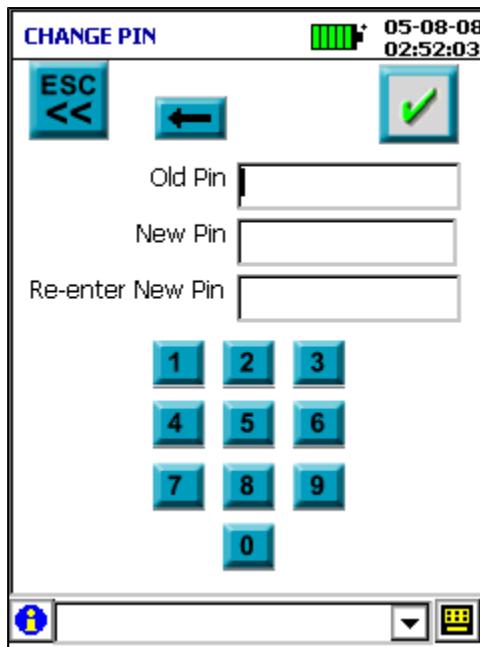


Figure 91: Change PIN screen

36. Enter the current PIN in the **Old Pin** field.
37. Enter the new PIN in the **New Pin** field. The device will accept up to six numbers.
38. Enter the new PIN a second time in the **Re-enter New Pin** field, to make sure it has been entered correctly.
39. Tap the **CHECK** button to confirm the change of PIN.

To correct an entry error, tap the **Clear** button to clear the entry in the current field.
If you decide not to change the PIN at this time, tap the **ESC** button.

40. When prompted, present the card to the card reader.

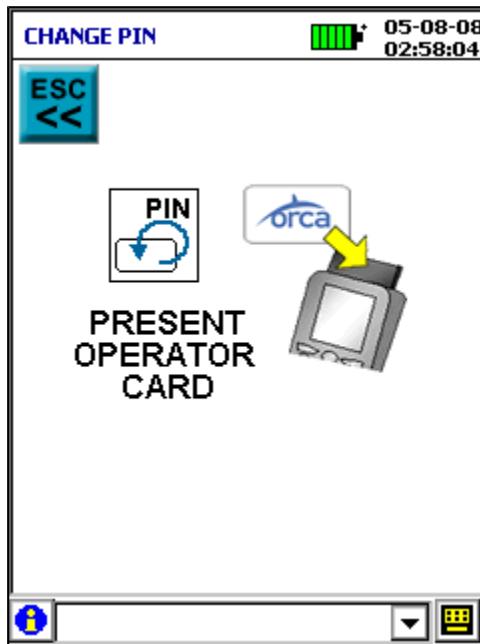
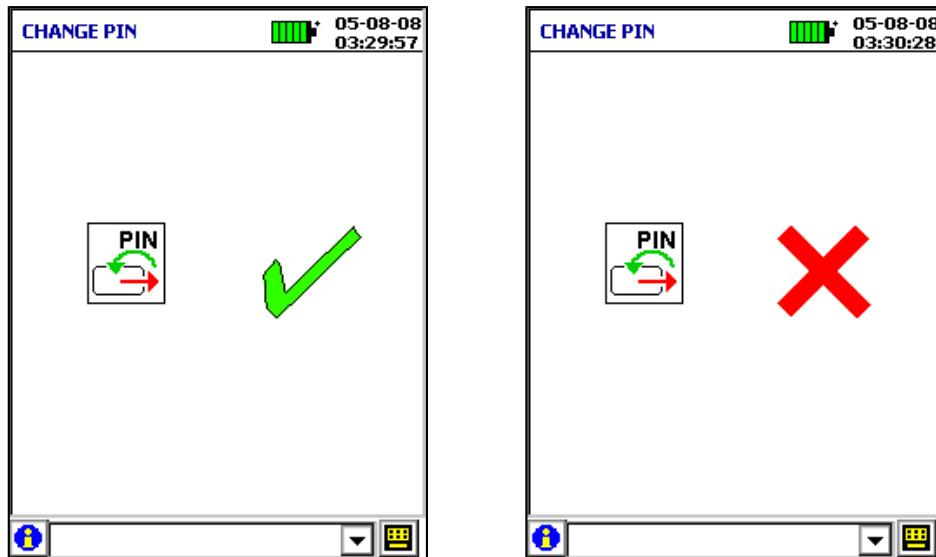


Figure 92: Change PIN Present Card screen

The **Old Pin** entry will be verified to see if it is valid, and the **New Pin** and **Re-enter New Pin** entries will be verified to see if they are consistent.



If the entries are correct, the PIN will be changed and this message shown.

If the entries are not correct, the PIN will not be changed and this message will be shown.

Figure 93: Change PIN Success and Failure screens

41. Tap the **ESC** button to return to the **Supervisor** screen.

4.1.5 Unblock



The **Unblock** screen is launched from the **Supervisor** screen. This screen allows blocked operator cards to be unblocked.

42. Tap the **Unblock** button or press the **6** hotkey.

The **Unblock Card (Present Card)** screen is displayed.

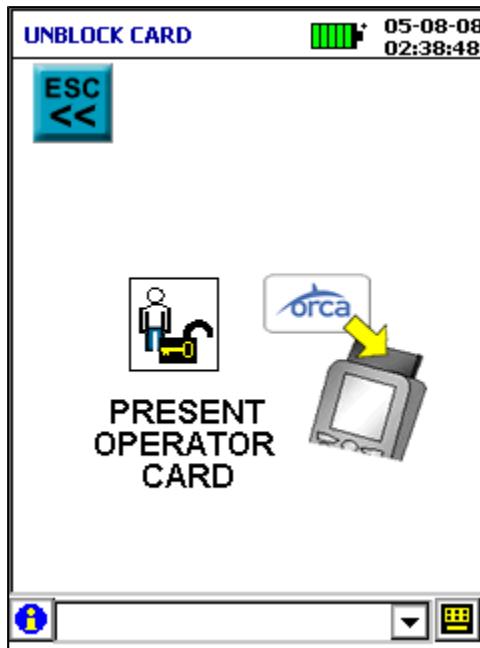
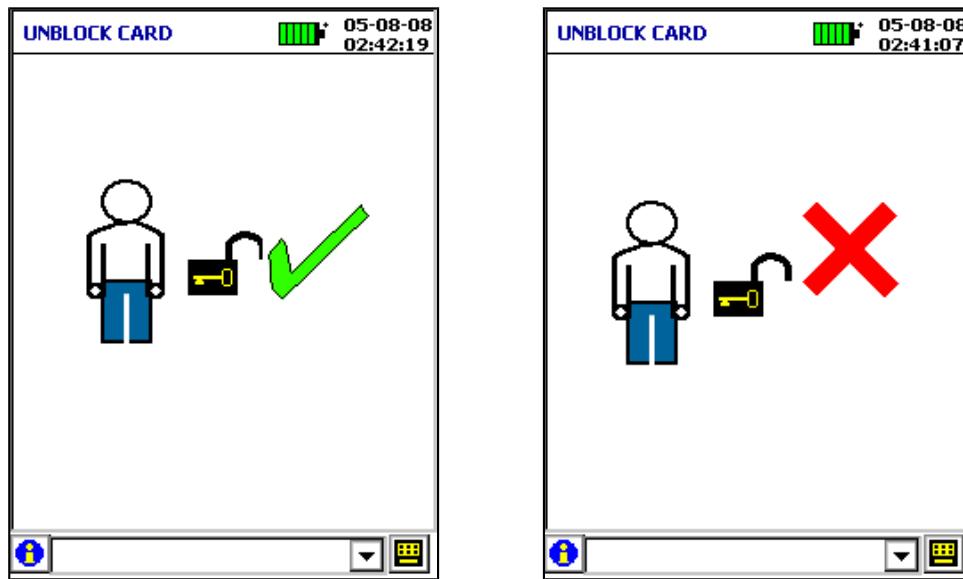


Figure 94: Unblock Card – Present Card screen

43. Present the card to the card reader.



If the unblock is successful, this screen is displayed.

If the card cannot be unblocked, this screen is displayed.

Figure 95: Unblock Card Success and Failure screens

44. Tap the **ESC** button to return to the **Supervisor** screen.

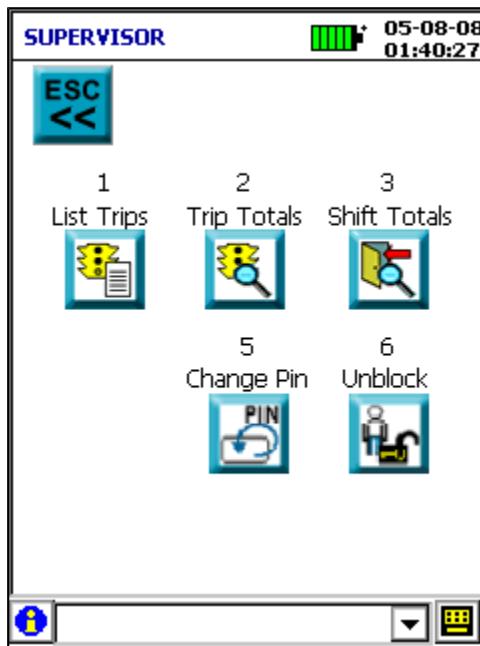


Figure 96: Supervisor screen

4.2 Exit Supervisor Mode

To exit Supervisor mode:

45. Press the **ESC** hotkey or tap the **ESC** icon.

The display returns to the **Log In** screen

5 Adjust Volume

To adjust the volume on the PFTP device:

46. At either the **Fare Mode** or the **Start Trip** screen, press the **9** hotkey or tap the **Options** button.

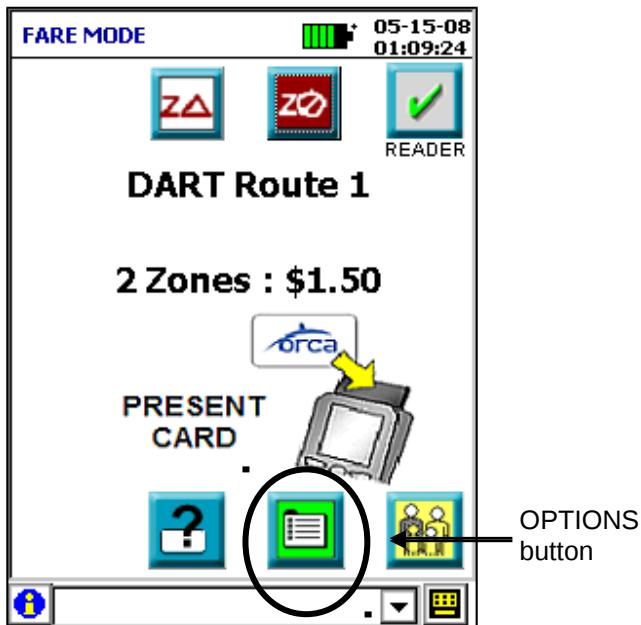


Figure 97: Start Trip screen – Options button

The **Trip Options** or **Shift Options** screen is displayed.

47. Press the **4** hotkey or tap the **Adjust Volume** button.

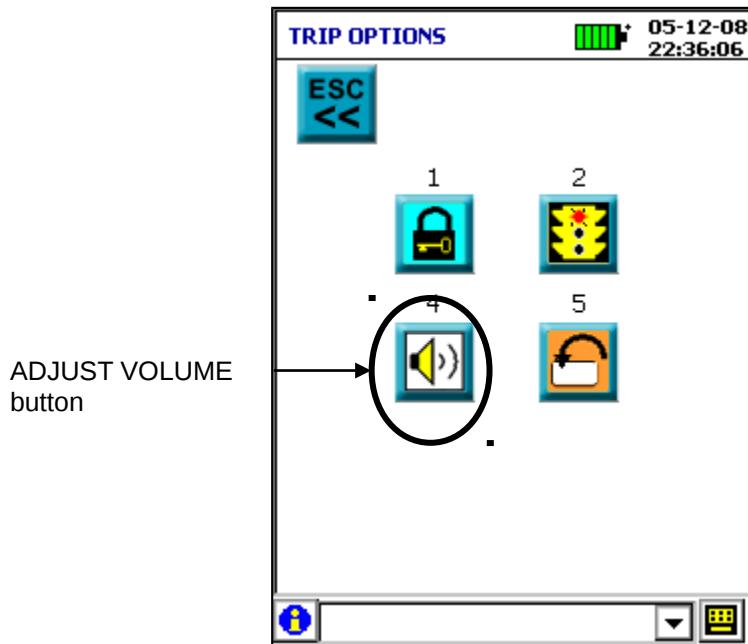


Figure 98: Options screen – Adjust Volume button

The **Volume Control** screen is displayed with the slider adjusted to the current volume setting.

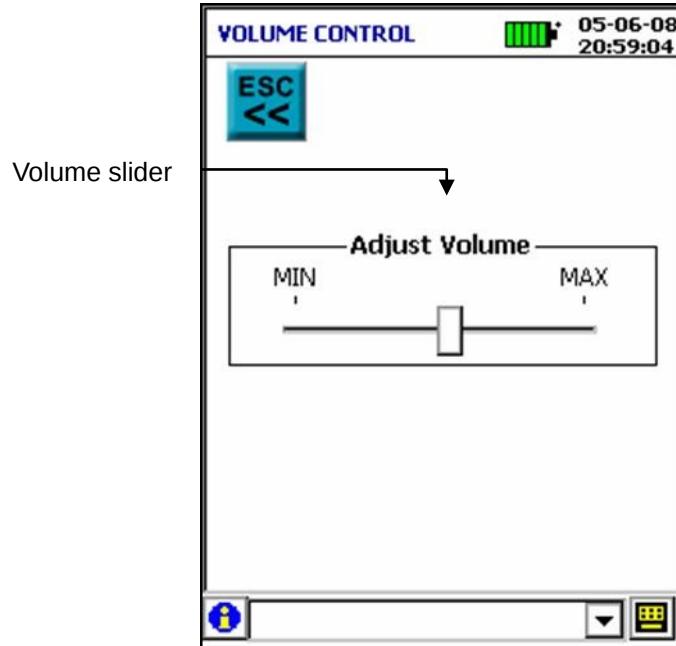


Figure 99: Adjust Volume screen

48. Use the stylus to drag the slider on the screen to adjust the volume.

Note: The maximum and minimum volume levels are configured in CD. When the operator ends the shift, the volume is reset to the default value.

49. When the desired volume is set, press the **ESC** hotkey or tap the **ESC** icon to return to the previous screen. The new volume setting will be saved.

6 Troubleshooting

This section describes situations in which the PFTP is not operating correctly, and possible solutions. If you are not able to correct the fault with the help of this information, please refer the PFTP to a Maintenance person, or return the device to technical support for their attention.

6.1 Out of Service

If the **Out of Service** screen is displayed, the reason for the fault is given in a scrollable box on screen.

It is important that the latest CD is available. This is verified through the CD List in Maintenance mode, so you will need to refer the device to a Maintenance person.

6.2 Device Ceases to Operate

If the PFTP stops responding to keypad or keyboard input, then you should refer the device to a Maintenance person, or to technical support.

6.3 Device Will Not Restart

If the PFTP will not start, the batteries might be discharged. Recharge the batteries by placing the PFTP into the charging cradle until the batteries are fully recharged. This should be done as often as practical.

In normal use, battery charge should be verified periodically and action taken to avoid situations in which the batteries become fully discharged.

Note: If the PFTP loses all battery power, it will lose the registry content and drivers. This will require the device to be returned to technical support to be reconfigured.

7 Error Messages

The screens in Table 2 show various error messages that might be displayed on the PFTP.

Table 2: Error Messages

Error Message	Description
	Battery Warning
	<p>Note: It is most important that the device be returned to the charging cradle regularly, so that recharging can take place.</p>

Error Message	Description
	<p>Memory Full</p> <p>If the PFTP has not connected to the DAC for an extended period, the UD will not have been uploaded. Once the device memory becomes full, the PFTP will not carry out further activities until it has been connected to the power source, so that the DAC connection can take place.</p> <p>It is important to have regular data transfers, because the download of current CD is vital to the effective operation of the PFTP.</p>

Appendix A Terminology

This section contains lists of acronyms, abbreviations, and terms used in this document.

A.1 Acronyms and Abbreviations

Table 3 contains the acronyms and abbreviations that are specific to ERG. In general, industry standard acronyms and abbreviations are not defined in this table.

Table 3: Acronyms and Abbreviations

Acronym or Abbreviation	Definition
AFC	Automated Fare Collection
BOC	Back Office Computer
CD	Configuration Data
DAC	Data Acquisition Computer
DART	Dial-a-Ride Transit
ERG	ERG Transit Systems (USA), Inc.
ESB	ERG Service Bureau
FTP	Fare Transaction Processor
HCP	Handheld Card Processor
KCM	King County Metro
ORCA	One Regional Card for All
PFTP	Portable Fare Transaction Processor
RFCS	Regional Fare Coordination System
UD	Usage Data

A.2 Terms and Definitions

Table 4 contains the terms that are specific to ERG. In general, industry standard terms are not defined in this table.

Table 4: Terms and Definitions

Term	Definition
Automated Fare Collection	The overall process for collecting and correlating fares and transit products for the Regional Fare Coordination System (RFCS).
card	Refers to a contactless smart card. The medium used by a cardholder to store applications.
configuration data	A generic term for data that is sent to a device or host to configure its functionality.
contactless	Refers to a smart card or card reader in which the two do not have to come into contact; information is transferred via radio frequency over a short distance.

Term	Definition
Data Acquisition Computer	A central computer that collects the data from on-board, portable, and stand-alone FTPs or other designated RFCS equipment for transfer to the Clearinghouse and provide the relevant Agency with duplicates of the data files transferred to the Clearinghouse.
ERG Service Bureau	ERG's central processing center, responsible for card procurement, initialization, and distribution services. The ESB also provides second-tier customer service functionality and associated card and device management.
e-purse	An electronic representation of the monetary value on a fare card.
fare card	A nondisposable smart card for transit use.
multiride product	<p>A prepaid product that provides the cardholder with the right to travel for a specific number of journeys. For example, a ten-ride product, which offers the cardholder ten journeys. See <i>also</i> purse and period pass.</p> <p>A multiride product holds electronic value in ride units. A cardholder purchases a multiride product and receives a fixed number of rides on the multiride product on the card.</p>
	<p>The cardholder can subsequently use rides on the multiride product to pay for transit services from Service Providers that honor the multiride product.</p>
operator	The Agency staff member, ESB staff member, or any authorized person using the RFCS equipment.
pass	A card product that permits unlimited journeys by the cardholder on a specific transit operator within a specific time period.
passback	A validation condition that occurs if a smart card is presented again at the same device within a configured time, and the ticket was issued from a Period product. The term originates with the concept of a cardholder "passing back" a smart card out of a bus window to allow another person to use the card for fare payment.
period pass	An electronic record maintained on a fare card that permits unlimited rides by the cardholder on specific transit operators within a fixed amount of time. Period passes are products that cover fares less than or equal to the face value of the product. A period pass does not have the concept of a discrete remaining value that is affected on a per usage basis. See <i>also</i> pass.
Portable Fare Transaction Processor	The PFTP is a handheld computer operated by Agency personnel to process RFCS transactions where fixed position equipment is impractical. It is used for fare payment transactions and card inspection.
product	A form of contract between the product issuer and cardholder. A generic term for the collection of specific product types, i.e. multiride, period, and purse products.

Term	Definition
revalue	Revalue of a card comprises the following operations: <ul style="list-style-type: none">Initial value of a fare card with a pass, multiride product, or stored valueAddition of a new pass, multiride product, or stored value to a fare cardExtension of the period for which a pass is validAddition of further rides to a multiride product.
smart card	A card with an embedded computer chip. A smart card is the same size as a credit or debit card.
timeout	A period of inactivity that results in a device reverting back to the previous screen or logging off the operator.
usage data	A generic term for data that is generated when a transaction or event occurs. For example, a transaction record is a type of usage data.

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Appendix C References

The following materials are to be used in conjunction with or are referenced by this document.

- [1] Contract 229944 (April 29, 2003)
Division III: Equipment Specifications.
- [2] SEA-01052
Portable Fare Transaction Processor (DR 105B) - Functional Specification

Appendix D Document History

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